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HENRY BARNARD, LL. D.

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FREDERIC B. PERKINS,

Publisher of Barnard's American Journal of Education.

Hartford, Conn., 1860.

Yours affectionately,

E. C. Wines.

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I. ENOCH C. WINES.

ENOCH C. WINES, D.D. LL.D., first President of the City University, St. Louis, Missouri, was born in Hanover Township, Morris County, New Jersey, on the 17th day of February, 1806. His ancestors were from Wales. They were among the first settlers of the eastern portion of Long Island, where many of their descendants still reside. One of them, the Rev. Abijah Wines, was the first professor of theology in the Theological Seminary of Bangor, Maine. The father of Dr. Wines was a farmer, and having removed from New Jersey to Vermont when his son was about six years of age, he purchased land on the beautiful and romantic shores of Lake Champlain; and here was laid the foundation of that robust frame and vigorous health, which have aided so largely in the successful prosecution of whatever that son has since undertaken. He does not hesitate to express his great indebtedness to his father for having wisely kept him at work on the farm until he was fifteen years old; for his physical constitution was in this way so matured and strengthened, that, in the severest and most protracted mental labors, he has never broken down, and indeed has never suffered but one serious attack of illness through a life extending over half a century.

More is due to the influences surrounding us when our education, in the true sense of the word, begins, than is perhaps generally supposed or admitted. The instructions of parents, the nature of our youthful employments, the objects which we daily contemplate, and the companions with whom we daily associate, inevitably make their abiding impression, and can not, in justice, be passed over when seeking to know how a human mind was educated. Something more than schools is to be taken into account; something that often shapes all the acquirements made in schools, and gives direction to our intellectual efforts when we ourselves may be wholly unconscious of the origin of the impulse. The scholastic advantages of young Wines were poor enough, having nothing better than the ordinary district school to attend in the winter months, at a time when the cheapest teachers were employed rather to take care of the children than instruct them; but it was not without lasting benefit that, while his frame was hardening under the healthful work of the farm, he had leisure for reflection and self-communion and patient thought, as he followed the slow plough. Nor must we leave out of view another of his educators of a different character, found in the sublime scenery around Lake Champlain. There were gentle voices speaking to the boy mysteriously from the clear water and blue mountains, and the echo of these voices is still heard after the lapse of forty years. The result of these silent but potent influences is still seen in many a poetic thought, starting out from the midst of the most logical discussions, like gems flashing here and there in a quarry of solid rocks.

At the age of fifteen he was sent to the Castleton Academy, then under the care of Henry How, A. M., who united in himself the high qualities of the ripe scholar, the skillful teacher, and the polished christian gentleman. Two years afterwards he entered Middlebury College, Vermont. The faculty at that time was composed of gentlemen of acknowledged worth and distinguished ability. The venerable Joshua Bates, D.D., was president; Robert B. Patton, one of the most eminent Greek scholars our country has ever produced, was professor of the Greek language and literature; and the Rev. Dr. John Hough, a gentleman of rare genius and of the highest culture, was professor of Latin. Here he was graduated in 1827, receiving the second honor in his class, in the Latin salutatory, the valedictory oration, which was the first, having been assigned to Henry Smith, (now the Rev. Dr. Smith,) for many years professor of languages in Marietta College, Ohio, and subsequently president of the same, and at the present time, (1860,) professor of ecclesiastical history in the Lane Theological Seminary near Cincinnati.

Immediately after his graduation, Dr. Wines became principal of the academy in St. Albans, Vermont. Here, however, he continued only six months, in consequence of having accepted the offer of a private school in Washington city. At the expiration of a year in this new field of labor, where he gave high promise of his future usefulness and distinction, he was appointed professor of mathematics in the United States Navy, and was ordered on board the frigate Constellation for a cruise up the Mediterranean. While he desired to visit and see for himself the scenes and cities of the old world, with which his youthful studies had made him familiar, his principal motive for seeking this position was his desire to perfect himself in the languages of southern Europe—an object which good health and assiduous diligence enabled him fully to accomplish.

On his return, he made his first venture as an author, in the publication, through the well-known house of Carey & Lea, Philadelphia, of two volumes, 12mo., entitled "*Two Years and a Half in the American Navy.*" This work met with a favor and a success far beyond the author's expectations. It was reviewed in terms of high commendation by the leading papers and magazines of the country. It was republished in England, where, with a solitary exception, it met with a like favor from the literary journals of the united kingdom.

About this time, summer of 1832, he was married to Miss Emma, daughter of Arthur Joseph Stansbury, Esq., of Washington city, the veteran and accomplished reporter of the "*National Intelligencer.*"

Seven sons have blessed this happy and still unbroken union, of whom three are yet spared. Two of them, young gentlemen of fine talents and culture, are on the eve of entering the gospel ministry.

In the autumn of the same year, 1832, Prof. R. B. Patton, his old teacher in Greek, invited him to become his successor in the principalship of the Edgehill School, Princeton, New Jersey; a position which Dr. Wines accepted and assumed the following spring. This school was established in some degree, though not fully, upon the plan of the German gymnasia, a class of institutions with which a two years' residence in Germany had made Prof. Patton familiar. It had already attained a high reputation under the skillful and able administration of its founder. Fortunately it did not lose any portion of its renown or of its success after it had passed into the hands of Dr. Wines. Not half the applications for places in the school could receive a favorable response during the time of his connection with it. The sons of many of the most distinguished gentlemen in every part of the United States, were placed under his care; among others, those of Senators Clay of Kentucky, Barnard of Louisiana, Crawford of Georgia, Archer and Barber of Virginia, Southard of New Jersey, and many others scarcely less famous in the history of the country. The impression made upon the mind and heart of ingenuous youth by his labors in the Edgehill school, as well as the estimate placed upon them in after years by intelligent and cultivated men, is clearly seen in the subjoined communication from the Hon. Henry R. Jackson, of Georgia, one of the most eminent scholars and accomplished writers, as well as one of the ablest lawyers in the land, who for several years filled, with honor to himself and advantage to his country, the post of Minister Plenipotentiary to the Court of Austria. The letter is as follows:—

SAVANNAH, Georgia, Oct. 10th, 1859.

DEAR SIR:—Having understood that you are collecting materials for a biographical sketch of the Rev. E. C. Wines, I make bold to lay before you some of my own reminiscences of that gentleman as a teacher, to be disposed of according to your pleasure.

My acquaintance with Mr. Wines began at Princeton, N. J., in 1833, when he was principal and I a pupil of Edgehill Seminary; and I have always regarded the two years spent under his charge, as decidedly the most profitable of my educational life. That the reminiscences connected with them should be pleasing is not at all extraordinary, since there must be some abnormal influence at work to cast a cloud over buoyant, healthful, hopeful youth; and certainly there was nothing either in the personal disposition of Mr. Wines himself, or in the system of moral discipline which he adopted for his school, to engender such an influence. As I remember the one, it was genial, gentle, and patient to a peculiar degree; and the characteristic feature of the other was, that it substituted the familiar companionship of the tutor with the pupil as well at play as at work, and a standing appeal to the honor and noble impulses of the boy, for other and harsher expedients.

That I should remember my life at Edgehill, far more by its lights than its shadows, is therefore not to be wondered at; but I have always thought it remarkable that while the impressions left upon my mind by all contemporaneous and subsequent instruction, whether at school or at college, if not wholly lost, have been sadly worn away by the lapse of time, those made by the tuition of Mr. Wines have remained indelible, and still wear their own distinctive stamp. It may be said with indisputable force, that the first great object of education, and especially the education of the school, is to develop the mind, to set its complex machinery at play, irrespective of any positive information, of any lasting memories to be garnered; but will it be denied that if, at the same time, *nuclei* of suggestive thought can be permanently fixed, ideas of the beautiful entwining themselves with the very words of authors, studied mainly for the purpose of intellectual discipline—can it be denied that the teacher will thus have achieved a double triumph? And it is in this regard that I realize my peculiar obligation to Mr. Wines. To me certainly, his tuition touched nothing that it did not beautify, or which in beautifying it did not make a living, suggestive, and useful memory. Others may have sowed the seed, which, having produced their harvest, may have returned again in seed to the earth; he alone planted the evergreen.

If called upon to account for this peculiar result of Mr. Wines' tuition, I might be wholly at fault. Neither was I at the time the relation of preceptor and pupil existed between us, nor am I now, a competent judge of scholarship. I have had the pleasure of meeting Mr. Wines but once since, more than twenty years ago, when he bade me farewell at New Haven, upon my entrance into Yale College. But whether ascribable to profound scholarship, to extraordinary patience, or to a cordial sympathy with the young mind and heart, creating the mesmeric connection by which the orator, as well as the professor, engages, sways, and impresses his auditor—the effect bears absolute testimony to the possession by Mr. Wines, of the tact or talent (call it by what name you may) of the consummate teacher. Rare power! and invaluable as it is rare!

My vacations were spent with him either at Edgehill or in travel. During one of those vacations, at his suggestion, I studied the "*Ars Poetica*" of Horace, and my daily recitation to him, with his comments upon the poem, constituted one of the most pleasant of my pastimes. It would be impossible for me to place an estimate upon the profit which I derived from that labor, (if labor it can be called,) altogether voluntary upon both sides.

When traveling, it was my habit to keep a journal, and the same critical talent, the same appreciation of the beautiful which had disclosed the (to me) hidden charms of the classics, were ever active in pointing out whatever was worthy of note in the works of the more material and imitative arts. As Mr. Wines' image is identified with all of the authors, and books I studied under him, so it is inseparably associated with the places which we visited together. I never glance at the former, I never revisit the latter, without the thought of him—his genial smile, the gentle, persuasive intonation of his voice, never losing its kindly music, though explanation, pertinaciously called for, must have taxed the most patient of spirits.

It is often the chief reward which a faithful teacher receives in this world, to have a beautiful wreath placed around his modest brow by the hands of illustrious men, who once sat at his feet, and who caught from him the first impulse in their splendid career.

During a portion of the time in which Dr. Wines held the position of principal of the Edgehill school, he edited a monthly journal of education, and employed his pen in furthering the great objects embraced within that comprehensive term. He also attended educational meetings and conventions in various parts of the state, where he earnestly sought to promote the same objects by addresses and discussions.

In 1837, when the convention for framing a new constitution for the state of Pennsylvania was in session at Harrisburg, he was invited by members of that body to deliver a lecture before them, when they were about to proceed to a discussion of the article in the constitution relating to common schools. This effort was well received by the members. It won high commendation from such gentlemen as John Sergeant, Stephen R. Burrows, Judge Woodworth, and Jos. R. Chandler. There is reason to believe that it was not without its influence in shaping the action of the convention in reference to the educational measures and interests of the commonwealth. This lecture was afterwards expanded into a 12mo. volume, and published in 1838 under the title of "*Hints on a System of Popular Education.*" The Legislatures of Pennsylvania and New Jersey ordered each several hundred copies of this work for distribution throughout their respective states. The same year he published another educational work, entitled "*How shall I govern my School.*" This volume was well received by the public, and especially by teachers. It passed through several editions.

In 1838 he was called to the chair of ancient languages, and also to that of mental, moral and political science, in the Central High School of Philadelphia, then about to go into operation. To aid in the organization of this new and important institution, he was commissioned and sent by the controllers of public schools to Boston, to visit the schools and examine into the educational system of that city. During the execution of this mission, he wrote a series of letters, descriptive of Boston and its environs, to the "*Philadelphia United States Gazette.*" Messrs. Little & Brown subsequently published these letters in a 12mo. volume, under the title of a "*Trip to Boston.*" The late Mr. Amos Lawrence purchased many hundreds of copies of this work for gratuitous distribution, esteeming it the best description of Boston ever published.

The following year, 1839, he published a small 16mo. volume, entitled "*Letters to School Children.*" This was adopted as a text-book in some schools, and was used by several eminent teachers in Boston and elsewhere as a kind of syllabus of lectures to be delivered to their pupils. During the same year, Mr. Nathan Dunn having opened his magnificent collection of Chinese curiosities in Philadelphia, at his request, Dr. Wines prepared and published an 8vo. volume, entitled "*A Peep at China in Mr. Dunn's Chinese Collection.*" This book brought the author a highly complimentary letter from the Hon. Edward Everett.

During most of the time of his connection with the Central High School, the principal of it was Prof. Alexander Dallas Bache, LL. D., first president of Girard College, and now superintendent of the United States Coast Survey, who thus speaks of Dr. Wines' method of teaching:—

> Mr. Wines presented in his teaching a remarkable illustration of the life-like inductive method, as distinguished from the mechanical or routine method. His modes reminded me of some of the best teachers of the German Eclectic School. To attend the recitation of a class under his instruction, was to see an illustration of some of the best principles of "pedagogy." The immediate subject of the lesson was subordinate to the great principles of training. The special knowledge to be acquired, was not the most important lesson of the day. His own mind working upon and through his subject, infused its life into the pupils in a degree varying of course with their mental powers. His varied resources for arousing and keeping alive the attention of the pupils, were felt without attracting attention to the machinery itself, by which the effect was produced. He had the power of presenting important principles in a simple but definitive form, and of interesting and enforcing by judicious illustration. His oral instruction was, in fact, a pattern in its way. The plain and forcible statement of the truths of morals which he presented in familiar lectures, impressed, while they interested, his pupils. His ideas belonged to the school of "education," the *drawing out* from the pupils mind rather than that of simple instruction, or the forcing in of knowledge.

It was while Dr. Wines was connected with the Philadelphia High School, that he prepared his first course of lectures on the laws of the ancient Hebrews. During the time he remained in that city, he delivered those lectures twice in Philadelphia and New York, and once in all the principal cities of the Atlantic Board between New York and Savannah, and always with the strongest expressions of approbation from some of the most gifted minds of the country.

In the year 1844, he opened a boarding-school near Burlington, New Jersey, called the Oakland School. This institution was highly successful, gathering large numbers of pupils from all parts of the United States, and some from the West India Islands. Rev. Shepard K. Kollock, D. D., thus gives his reminiscences and impressions of the Oakland school and its principal:—

> It was in the year 1844, when I was pastor of the Presbyterian Church of Burlington, that Mr. E. C. Wines (now the Rev. Dr. Wines) established his academical institution at Oaklands, about two miles from the town. I had previously some knowledge of him as a man of high literary attainments, and of eminent

> skill in the management of youth; but after his school was in operation among us, I formed with him an intimate acquaintance, and had an opportunity of seeing much of him in his professional duties. Without entering into any detail of his method of instruction or mode of government, I would observe that he seemed to possess all those qualifications which fitted him for presiding with success over a literary institution. In all his government he was discreet and judicious; he never lost his dignity in his intercourse with his pupils, and therefore secured their respect, veneration, and obedience. Yet, while he was always firm and decided, he was so gentle and affectionate in his social feelings, that he bound the members of the school so closely to him by the cords of love, that, while they revered him as a guide, they confided in him as a father. His was a rare combination of sweetness of temper with firmness of authority, of the amiable and the commanding. He entered with lively interest into the circumstances of his scholars, gave instruction according to their varied wants and talents, and performed the duties due to each with wonderful discrimination.

During the three years and a half in which he was engaged as principal of the Oakland school, he attended numerous educational conventions, and took a prominent part in their proceedings; delivering addresses and lectures, and every way striving to advance the cause of learning. Especially did he labor to rouse the public mind to the importance and value of normal schools, and to the necessity of raising teaching to the dignity of a learned profession; and to this end of preparing teachers for their business by a thorough course of professional training. A normal school has since been established by the state at Trenton; an institution to which the Hon. Edward Everett, after a careful inspection of it, gave the palm of excellence over all the institutions of the kind he had ever visited. We know it to be the opinion of the Hon. Richard S. Field of Princeton, a gentleman of the highest social and professional eminence, and who exerted a potential influence in getting the bill creating the school through the Legislature, that the efforts of Dr. Wines contributed materially to the formation of a sound public opinion which at length demanded a seminary of the kind, and rendered it safe and proper for the legislative authority of the state to call it into being. This is evident from the following paper prepared by Mr. Field himself, with a view to aid in the preparation of the present memoir:

> I first became acquainted with Mr. Wines when he had charge of Edgehill school in Princeton, New Jersey. I had never met with any one who seemed to me more thoroughly to understand the true principles of education, or more successfully to apply them. Edgehill school while under his care, was one of the most admirably conducted institutions of the kind I have ever known.
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> In 1838 a movement was made in New Jersey, with a view to the improvement of the condition of our common schools which were then in a most deplorable state. A convention, composed of delegates from the different counties of the state, assembled at Trenton on the 16th of January, where spirit-stirring speeches were made, and strong resolutions* adopted, exposing the defects of the existing system, and urging the necessity of immediate reform. I was then a member of the house of assembly, and chairman of the committee on education, and the interest thus awakened in the subject, led to the passage of a law which, although

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* These resolutions were drafted by Dr. Wines.

> not every thing that was desired, was still a great advance in the cause of popular education. To this movement, attended with such important results, and out of which has grown our present school system, no one contributed more than Mr. Wines. He prepared a volume of some 250 pages, entitled "*Hints on Popular Education*," addressed to the late Professor Dod and myself, in which he urged with great force the importance of popular education—the duty of the state to provide for it—the branches of study proper for common schools, and above all, the absolute necessity of "seminaries for the education of teachers." This, I believe, was the first time that the establishment of normal schools was ever seriously proposed, or publicly advocated in New Jersey.
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> But this was a step quite in advance of public opinion at that time. The necessity for such institutions was not then perceived. Mr. Wines, however, did not lose sight of them; nor did he despair of living to see this crowning work in our system of common schools adopted in New Jersey.
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> In 1847, having removed to Burlington, we find him attending a convention of the friends of education in that county, called for the purpose of recommending to the Legislature the establishment of a state normal school. He was one of a committee, of which the late Senator Wall was chairman, appointed to draft resolutions and to prepare a report upon the subject to be submitted to an adjourned meeting of the convention. The task of preparing this report was assigned to him, and well did he discharge it. He addressed letters to various distinguished gentlemen in various parts of the country—among others to Edward Everett, Bishop Potter, William H. Seward, John A. Dix, Horace Mann, and D. P. Page, asking an expression of their views on the professional education and training of teachers. The answers to these letters and the report of the committee, were published in a pamphlet and circulated extensively throughout the state. Nowhere are the arguments in favor of normal schools more clearly and strongly put, or the objections which have been made to them, more triumphantly repelled than in this report. It was calculated to make a deep impression upon the Legislature and people of New Jersey. Doubtless it did make an impression, although its effect was not immediately perceptible. But the seed thus sown did not perish. It was destined in a few years to spring up, and to bear most abundantly.
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> On the 9th of February, 1855, the Legislature of New Jersey passed an act more munificent than any which Mr. Wines had ever dared to hope for, by which the sum of $10,000 a year was appropriated to the support of a state normal school, to be expended by a board of trustees, with no other limitation than that of "carrying out the purposes and designs of the act, in a manner worthy of the state of New Jersey." And the last time I had the pleasure of seeing Mr. Wines, was in the large hall of one of the noble buildings of that institution, attending a convention of the friends of normal schools from all parts of the United States.

The year 1849 was spent by Dr. Wines in re-writing his lectures on the Hebrew laws, and in delivering them in all the principal cities and towns of New England. During the same year, he sought and obtained license to preach the Gospel from the congregational association of Rhode Island, and thus at last fulfilled a wish and purpose which had been cherished even in college days, but which circumstances, not necessary to be detailed here, had prevented him from carrying out. In the year 1850, he was called to the Presbyterian church of East Hampton, Long Island, and having accepted the call, was duly installed as pastor. Here he wrote over for the fifth or sixth time his illustrations of the Hebrew laws, putting them now into the form of a treatise, and publishing the first volume (8vo.) under the title of "*Commentaries on the Laws of the Ancient Hebrews.*" Another volume still remains to be issued, which it is hoped will ere long be ready for the press. This work has been honored with the highest eulogiums both in reviews and magazines, and from gentlemen of eminence in the legal as well as the clerical profession. The Hon. Horace Binney, of Philadelphia, among the ablest of living jurists, in a letter to the author, says:—

> I have read a second time, and with renewed pleasure, the "*Commentaries on the Laws of the Ancient Hebrews;*" and I must add, that the work has been as productive of instruction and satisfaction to my family, as it has been to myself. I know of no book that is comparable to it, in point of information and attraction, on the subject of which it treats; and there is no subject that, in its three relations, historical, political, and religious, is of more importance and general interest. Of the learning exhibited in the work, I must leave others to speak; but the sources seem to have been faithfully explored, and as far as I have been able to follow them, candidly represented. The political parallel drawn between the government of the Hebrews and modern representative governments, our own especially, is new to me, and is exceedingly well put and well sustained; and if to its very pure style, I may add the conservative temper it manifests in regard to the republican features of our constitution, you will understand why the whole work has made so deep an impression upon me. I am very much obliged to you for it, as I think all the reading men in the country must feel themselves to be. I hope that the remaining books which are promised in the preliminary chapter, will not be long deferred, as my time is probably short, and my desire to profit by them very strong.

The first volume of this instructive and interesting work has already gone through four editions.

While engaged in this greatest of his literary efforts, and in the discharge of his pastoral duties, Dr. Wines was elected professor of ancient languages in Washington College, Pa., and left East Hampton in January, 1854, to enter upon his new field of labor.

The estimate in which the services of Dr. Wines in Washington College were held, may be seen in the fact that, on his resigning his professorship, the trustees of that institution spontaneously and unanimously conferred upon him the honary degree of Doctor of Laws; as well as from the following letter from the Rev. Richard Henry Lee, LL.D., Rector of the Episcopal Church in Washington:—

> When Dr. Wines was elected professor of the ancient classic languages in Washington College, Pennsylvania, I was a professor in the same institution; and for three years, I served with him in the consultations of the faculty, and in the general labors of the College. It is needless to say, that we found Dr. Wines to be fully entitled to his high reputation as an accomplished scholar, and a faithful and skillful instructor, and a wise, practical assistant in the administration of the discipline and general affairs of a learned institution.
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> As a cordial and enlightened gentleman, a profound scholar and faithful instructor, as a learned and liberal divine and writer, Dr. Wines must be ranked among the eminent men of the day. His work on the Hebrew commonwealth will convey his name to posterity.

In connection with his professorship, he discharged the duties of pastor to a small country church, ten miles distant from the college. His relation to this people was an exceedingly happy one, and by the blessing of God, abundantly fruitful. Four seasons of special religious awakening and revival, were experienced within the space of five years, during which nearly one hundred persons were added to the communion of the church. We had intended to say something special in relation to Dr. Wines as a preacher, but we find, in a communication which we hold in our hands, from Mr. David N. Lord, the learned and able editor of the "*Literary and Theological Journal,*" so just a view of him in this respect, that we content ourselves with giving the communication entire, after placing upon it our fullest endorsement.

> Dr. Wines' leading traits as a theological writer, are strength and clearness of intellect, carefulness of investigation, soundness of judgment, simplicity and force of logic, and earnestness. He studies his topics with unusual industry, impartiality, and good sense; never neglecting important sources of information, and never withheld by prepossession from discerning and receiving the truth, nor led away by specious show of popular novelties; and while upright and cautious, frank and independent in the avowal and advocacy of his convictions. In discussing the great themes of his commentaries on the laws of the ancient Hebrews, which demand high powers in the sphere of philosophy, logic and criticism, he takes an honorable rank among the eminent men who preceded him, in the mastery of his subject, comprehensiveness of views, sagacity in meeting objections, and skill in disembarrassing the truth from misrepresentation, and presenting it in attitudes that win the interest and assent of the reader. His other theological writings are marked by the same characteristics, sound and vigorous sense, clear apprehension and statements, direct and convincing reasoning, and earnest and impressive appeals. His style is simple, nervous, and argumentative, adorned here and there with natural and striking figures, and lighted up by apt and tasteful illustrations—his pages always leaving the impression that he is aware of the import of his words, and that they are the expression of his sincere and earnest convictions.
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> His manner in the pulpit is in harmony with these features of his mind. Slightly above the medium size, with an open countenance, a clear voice, and distinct enunciation, he is self-possessed, grave and emphatic in his utterance; engaging his audience in the didactic parts of his discourse by the clearness of his points and the ease and force of his reasoning, and rising in his exhortatory passages to solemnity and warmth.

In the fall of 1857 he received a unanimous invitation from the trustees of South Hanover College, Indiana, to the presidency of that institution. This position, however, he did not see his way clear to accept, especially against the earnest remonstrances of the friends and patrons of Washington College, and accordingly he declined it. Two years later, he was induced by a most urgent call of the board of trustees, to accept the presidency of the City University of St. Louis, a new institution founded by the presbyterians of the great western metropolis; and designed to rest upon the basis of a positive, evangelical christianity, to be conducted in accordance with its principles, and to be imbued and pervaded with its pure, lofty and regenerative spirit.

Such is an imperfect sketch of a laborious, useful, and honorable life.

II. MORAL EDUCATION.[*]

LECTURES ADDRESSED TO YOUNG TEACHERS.

BY WILLIAM RUSSELL,

Editor of the American Journal of Education (Boston,) 1826-29.

INTRODUCTORY OBSERVATIONS.

Importance of the Study of Man's Moral Constitution.—The vital part of human culture is not that which makes man what he is intellectually, but that which makes him what he is in heart, life, and character. Intellectual cultivation, however, is a source of moral power to the individual, not merely in the mental aid which it enables him to render to others, but in that which it gives him for the understanding and government of himself. All intellectual training, therefore, is necessarily moral in its influence, so far as regards enlarged opportunity and power of intelligent, voluntary, and efficient action. It is only misguided ignorance, blinding prejudice, or perverted ingenuity, that would ignore or undo, in educational administration, the natural union of morality with intelligence.

A culture exclusively intellectual serves but to exhibit the skeleton of the mental frame, which moral influence is to furnish with the means and the power of action, and into which religious principle is to breathe the breath of life. But when moral culture assumes a separate and formal character, it ceases to be a living spiritual reality, and becomes but a mechanical routine of "the letter" which, we are told, "killeth." No reliance for effective moral influence on disposition or character, can be safely placed on mere didactic inculcation or catechetical instruction. The oracles of Divine truth tell us, that the highest moral training—the spiritual—does not separate "admonition" from "*nurture*"—the life-giving influence—but combines the two in the educational process of "bringing up." The true study of the human being, as a subject of meliorating culture, contemplates the child in the living unity of his whole nature. It regards him as an intelligent self-conscious, self-impelling, self-guiding, self-responsible agent, yet dependent on, and responsible to, the law of a higher power than his own, which has summed up and defined his individuality in a conscious will.

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[*] At the suggestion of Hon. Henry Barnard, the following series of lectures has been transcribed from the author's general course on Human Culture, originally addressed to the students of the Merrimack, (N. H.,) and New England, (Lancaster, Mass.,) Normal Institutes. A previous series on Intellectual Education, may be found by referring to Vols. II., III., and IV., of this Journal.

All careful investigation, however, in the mental, not less than in the physical world, implies an examination so close as to constitute a thorough analysis—not, in this instance, for the sake of a mere philosophic solution, but for the purpose of securing a true synthetic construction of life and character, by the better understanding, so obtained, of constituent elements and the influences which may best secure their living union and power. In every process of "instruction," (*inward building,*) the educator, whether parent or teacher, if he would work thoughtfully and successfully—if he would avoid laying upon the mental foundation of created capability a superstructure of "wood, hay, stubble," instead of the "gold, silver, and precious stones" of true worth and value—is in duty bound to see to it that he attentively observe, and carefully study, the nature and constitution of the being, whose fabric of character it is his office to aid in building up. The educator must, in a word, thoroughly understand and appreciate the elements of human character. These must be familiar to him in all their relations, and in all their varied workings, that he may understand more fully the means and sources of healthy action and healthful regimen, which it is his duty to prescribe.

True position of the Teacher as a Moral Educator.—Even to the youngest and least experienced of teachers, who wishes to acquit himself to the moral obligations under which he is professionally laid, equally to his pupils and himself, we would earnestly recommend not the practice of looking into some text-book of moral philosophy, for his own guidance, or for the instruction of his pupils, but—in the true spirit of an earnest, faithful, and intelligent instructor, who is aware that all he daily does or omits is a part of the effectual, living education of the subjects of his influence—the careful study and watchful observation of the moral indications and tendencies of his pupils, as intimating their capabilities and suggesting his measures and resources. It is his part to carry on, in successive stages, the sacred offices of parental love and wisdom, daily transferred to his charge, to be fulfilled in the sphere of the schoolroom, according to the measure of his judgment, his skill, and his benignity. But the proper home influence, though so often missing, is the true ideal of purpose, plan, and work, for the teacher; and, so far as regards moral results, in the schoolroom as at home, the appropriate influence must ever be that of an authoritative, affectionate, living, presence—not that of an inanimate book or a deadening routine.

No one doubts that, to become a skillful cultivator of the intel lectual capabilities of his pupils, the instructor must understand the character and action of the intellectual faculties—not merely as these exist in the enumeration of particulars in a text-book of mental philosophy, but as they actually reveal themselves in the personal action and relations of the living pupil, in whatever concerns the use and exercise of his mind. The teacher must take the position not of a student of intellectual philosophy, ruminating in his study, but of a wakeful observer and inquirer into the phenomena of an actual, living specimen of the human mind, whose course is to be, in part, dependent on the fidelity of his observation, and the genial character of his influence. Our previous course of suggestions on the cultivation of the intellectual faculties, it will be recollected, assumed this ground as the appropriate and peculiar one of the teacher, and the only one on which he could justly be regarded as doing aright his professional work. The same ground we would claim for the teacher, when surveying the field of moral culture.

Arrangement of Topics.

Recapitulation of Method.—The plan which we propose to adopt in the following series of lectures, will still be, as in the former series, that which places the teacher as a responsible personal observer and reporter on phenomena and facts; watching and aiding the progress of human development. Our survey of the field of intellectual cultivation, as founded on the nature and constitution of the human being, presented, (1.) it will be recollected, *a given class of the mental powers and faculties*, themselves, as subjects of examination; (2.) *the actuating principle*, or moving spring, *of these powers;* (3.) *their* perceptible *natural tendency*, or course of action; (4.) *the results* of their action; and, (5.) *the educational processes* designed for their appropriate development.

Following this plan, we avoid all mere theoretic speculation, and stand on the sure ground of observed fact—the only point of view for the discovery and recognition of truth, or the direction and guidance of the teacher. We thus, moreover, place the work of education in the teacher's own hands, as a charge devolving on him, not merely professionally, but personally, and laying him under his just responsibility, as an agent for others, and as one intrusted, in the capacity of temporary guardian, with the dearest of all human interests, and the best of all hopes—hopes extending even to a neverdying life.

I. Classification of the Moral Capabilities.

Unity of Man's Moral Constitution.—Adopting the above method for our course of suggestions on moral education, we should proceed to enumerate, as a class, the most prominent of the peculiar powers and faculties which constitute man a moral being, capable of moral influence, instruction, and development. But as every moral act involves the whole man—not merely the executive organ of muscle or nerve, intellect, heart or will, but all, in their living unity and active coöperation, we can not, as when examining the intellectual faculties, select any class or group of powers as exclusively constituting the moral capabilities of the human being. We must take into view his whole nature, comprehending, as it does, the vast range of his physical, intellectual, emotional, and voluntary attributes, in the personal constitution and organization of the individual.

1. HEALTH *as an element of Moral Life.*—Man's moral condition, and his capability of moral development, depend, in no slight degree, on that intimate connection which the Creator has ordained between soul and body. As a necessary condition of the unity of man's complex nature, wholeness of being is essential to whole and true, that is, normal action, whether of body, or of mind, or of both. Physical disorder, by its reäctionary character, disintegrates its subject as a moral agent, by withdrawing the executive organism from coöperation and consentaneous action, in subordination whether to the dictates of reason and conscience, the solicitations of feeling, or the normal activity of the will. Physical suffering, and its attendant involuntary irritation, are sufficient to overcast the clear healthy action of the judgment, to stifle the monitions of conscience, to change the natural current of affection, to generate angry passion, and propagate moral evil, to any extent—from the petty ebullitions of peevish temper, to the outbreaks of the fiercest anger, or of raving and furious insanity. Health, then, the educator must ever be careful to enumerate among the conditions of morality, whether the healthy state of the agent be owing to the normal sanity of mere bodily condition, or to that health of the higher nature, conscience, which, in man's fallen state, must so often be invoked, to rule the turbulent and rebellious tendencies of a morbid physical organization, and which, when enlightened, and strengthened, and purified, by supernal aid, is a surer reliance than the happiest condition of the best normal animal life.—To this branch of our subject we shall have occasion to refer more distinctly, under other heads, in the discussion of parental and educational influences.

2. INTELLECT, *and its culture, important elements of Moral Life.*—The vital fact of man's moral unity of constitution, involves the condition of his intellectual nature, as sound and true, or otherwise. The unhealthy condition of the bodily organism, is sufficient to subvert, as we have seen, the whole moral character of the human being,

in seasons of excessive morbid reäction. *Sanity and vigor of mind*, not less than health of body, and conditions of moral life and action; as is sadly manifest when we advert to those unhappy cases in which there has been an overthrow or obscuration of the god-like power of reason itself. Insanity, whether in the form of mental aberration or delusion, is competent not only to impair, but to obliterate, the distinctive mental and moral attributes of man.

The enlightened humanity of our day mitigates by genial, and sometimes, successful treatment, the sufferings of our nature, when reduced to such deplorable conditions; and its kind offices are crowned with yet more marked success, in its endeavors to raise the idiotic and the feeble minded to a comparatively healthy intellectual and moral level. It is one of the highest tributes paid to moral culture—we may observe in passing—that such replacements of depressed human nature are generally recognized as owing their success to the purely moral measures adopted in effecting them, whether in cases of insanity or of idiocy.

Culture essential to Intelligence, and therefore, to Moral Elevation.—Gross ignorance, and utter absence of mental culture, are proved to be, in general, fruitful sources of crime, and of moral evil in every shape. It is not enough that a sane mind and sound judgment be taken into the account, as, indispensable elements in the production of legitimate moral results in action and character. The intellect beclouded and darkened by ignorance and its attendant hosts of error and prejudice, or benumbed by neglect and disuse, is incapable of the clearness and activity which belong to the normal states and conditions of the human mind. A pure, intelligent, and loyal adherence to principle and to conscience, can not, in such circumstances, be expected to exist. The character indicated in sacred scripture, "a brutish man" who "doth not know," may not have chosen his condition; but, while in it, he is disqualified for every proper exercise of man's reflective and moral nature. The density of ignorance to which some classes of the population of European cities, and the majority of the slave population of our own country, are sunk, shows, in its deplorable depression, and its nearly hopeless extinction or absence of conscience, how important the daylight of knowledge is to a pure atmosphere in the human soul.

Evils of excessive Cultivation.—Morality necessarily implies a certain degree of intelligence and of culture. But, unhappily, there is, as is too plainly apparent in the forms of civilized and city life, a condition in which a moral inefficiency of mind is attributable not to the absence, but to the injudicious excess of cultivation; and the pale and emaciated features of school children and students, too generally indicate the incompatibility of sedentary life and close, studious application, daily sustained, with a natural, healthy condition of body. The parental complaints against schools, as undermining the temper and vivacity of childhood, confirm the truth that the "much study" which "is a weariness of the flesh," impairs, also, the healthy vigor and freshness of the spirit.

Genial influence of appropriate early Culture.—Were early education what it should be, a course of invigorating, life-giving observation of nature and its products, and a succession of healthful, inspiring exercises, alternating with soothing relaxation and cheering recreation, and a strictly limited and very moderate exercise of pure intellection; culture and intelligence would cease to be, as now, too often purchased at the expense of a healthy tone of mind and habit. But, as we must recur to this branch of our subject when we come to the discussion of educational methods, we must leave it, for the present, with this postulate, that a sound, clear, vigorous, and well trained *understanding*, capable of correct and decisive *judgments*, is as important as the possession of *reason* itself, to constitute man a responsible, moral agent. In other words, that his *rational faculty* is a *moral power*.

3. ÆSTHETIC CULTURE: *its Moral Influence on Imagination and Taste.*—Among the intellectual sources of moral life and power, a prominent place must ever be assigned by the judicious educator to the moulding and directing efficacy of imagination and taste. If these influential faculties are untrue or impure in their action and character, the tendency of the whole moral being is "only evil, and that continually." If they are sound, healthy, pure, and vigorous, they become sure safeguards, faithful guides, and genial companions of the youthful spirit. They, also, rise to the rank of powers in the moral domain of humanity.

Moral influence of the impressions of Sublimity and Beauty.—In that commingling of intuition, feeling, and imagination, and, sometimes, even of reflective judgment, by which the soul is at once overawed, and delighted, and exalted, in the contemplation of the vast, the sublime, the majestic in nature or in thought, or in that only less elevating influence which is inspired by the blending effects of greatness and grace in the grandeur of nature or of noble art, or even in that delighted and admiring love which is elicited by the presence of beauty in the myriad forms and hues with which the Creator has invested the living and ever-varying aspects of nature, which man delights to imitate in art;—in all these relations of mind is involved a moral element of power, by which man's nature is ennobled and purified, and prepared, as in the vestibule of a sanctuary, for those yet higher and more effective influences which lift awe into adoration, and attract the soul to the beauty of holiness. Such at least, we know, is the natural tendency of unperverted mind, and the experience of every soul on which the true Light shineth.

The mind which, under the purifying influence of genial culture, enjoys the refining emotions and clear perceptions of a true "taste," (*relish*,) for those pursuits which lead to the admiring contemplation of nature, and to the practice of those arts which enable man to express his admiration of nature—possesses, in its love of the beautiful, a natural preparation for the reception of all those salutary impressions which, in a higher relation, are stamped upon the heart by the irresistible power of every trait of loveliness of disposition and character embodied in the daily beauty of a pure and amiable life.

The Graphic Arts which embody and repeat and perpetuate such impressions, are not to be overlooked in an enumeration of man's capabilities of refining and elevating culture, even in its strictly moral and spiritual relation. The dumb statue, by its perfect symmetry and grace, or its touching beauty, makes the heart eloquent inwardly with delight and love, with admiration, or with tenderness and sympathy. The portrait which recalls the image of the lost and lovely, the good and the true, the noble and the worthy, speaks most touchingly to us, from the spirit of the departed, in the language of the heart. The landscape which skillful art presents as a microcosm of glorious nature, conjured from dead, material means and implements, by a concentration of man's inventive genius and educated hand, deepens, at once, our love of this our earthly home of palatial grandeur and finished beauty, benignantly assigned us by the great Father, for our preparatory abode, and our admiration of the powers with which He has endowed the beings created in his image. The art which at once refines and elevates, does a noble preparatory work in rendering more vividly susceptible those faculties by which the soul, when awakened to the consciousness of its highest relations, is yet more effectually purified and ennobled.

But *Music*—that art which God has been pleased to consecrate for His own special service in the offices of human devotion, and which may be employed in the humble station of a peculiar minister to man's enjoyment, as a sentient being, capable of ever new and ever pure gratification from the concord of sweet sounds, is, in its influence on the soul, an element of singular moral efficacy, in its power to inspire with reverence, with joy, with ecstatic delight, to calm and soothe the agitated spirit, to touch the heart with sympathy for sorrow, or to mingle the humanizing emotions of brotherhood and companionship. Rightly cultivated and rightly practiced, it affects with a pure and benign influence both mind and heart; and happily, of late years, has it taken its appropriate place in schools, among the effective means of moral culture not less than æsthetic.

It is no undue enlargement in the enumeration of the moral capabilities of humanity, to include within its sphere the whole range of those arts by which man's conceptions of grandeur and beauty are rendered more definite in themselves, and more effective in their influence on his character.

4. SENSIBILITY, *as an element of Moral Life.*—In our preceding observations, we have adverted to health of body and mind, and to intellectual and æsthetic culture, as determining, in degree, man's moral capabilities; since a normal physical and intellectual state is the natural condition of normal moral action. Proceeding to the further consideration of the moral capacities and powers, the next element in our enumeration will be that *Sensibility* which, by Creative ordination, links man, by the sense of *pleasure* and *pain*, to the outward world, establishes a sentient world within himself, and gives birth to the vital elements of *love* and *aversion*, in all the varied forms of *appetite*, *instinct*, *desire*, *feeling*, *affection*, *passion*, and *emotion*, by which man is attracted or repelled, by which he is prompted to action and expression, and which consequently determine his *morality*, (*manner* of action.)

5. THE INSTINCTIVE TENDENCIES, *as Moral Incitements.*—(1.) *Appetite*, the natural primal craving for satisfaction, which implies a sense of want and a desire of gratification, more or less definite according to the degree of intellectual development and definite consciousness, secures, by Divine appointment, the perpetual renovation of vigor, health, and life, of comfort and complacency. In the natural sympathy of mind and body, it tends, also, to generate the genial dispositions and emotions, and to diffuse the moral element of happiness. The intelligent educator recognizes it as a moral power, in its influence on habit and character. He well knows that, in its pure and healthy conditions, it is an effective promoter of serenity and tranquillity and cheerfulness, and favors the exercise of the benevolent affections; that, when neglected, it brings on an irritative reäction, too strong, if extreme, for the control of the guardian power of conscience; and that, when glutted by excess, it imbrutes the whole being, and leads to those degrading habits by which humanity is desecrated or ruined.

(2.) *The natural Love of Activity.*—One of the earliest manifestations of instinct is the restless desire of action, which is seen even in the involuntary and spontaneous motions of the muscular frame in infancy, in the insatiable thirst for exercise in childhood, in the irrepressible tendency of boyhood and youth to active exertion, in the indefatigable industry of adult man; and not less in the instinctive craving for intellectual action, and the inextinguishable curiosity of the young mind, in the eager appetite for knowledge on all accessible subjects, and the earnest desire to investigate the problems of our being and destination, which impel the maturer mind, at every stage of life. The same desire of activity is marked in the child's natural craving for sympathy and affection, and in that desire for esteem and approbation which mark the dispositions of youth and manhood. All these impelling powers, as they tend to enlarge the sphere of life to the individual, and prompt him to fill it by corresponding exertion, become vital elements of moral life and character.

(3.) *The natural Aversion to Pain.*—This instinctive principle, which makes the sentient nature a provisional guardian of the safety and welfare of infancy, and, in degree, of humanity, throughout the course of life, operates, at first, with more obvious reference to the protection of organic life and health. But, as the mental powers progressively unfold themselves, and conscious sympathy becomes a source of pleasure or of pain, the instinct becomes a moral sentiment, and leads its subject to avoid whatever seems fitted to excite painful or disagreeable emotions in the consciousness of his fellow beings. It advances as self-consciousness becomes more fully developed, to that moral rank which places it in alliance with conscience, and warns us to shun the foreseen pain of evil doing, and the reproaches of that faithful monitor which Divine wisdom has implanted in the bosom of man to represent its own jurisdiction. It rises, at length, to that fear of God which deters from sin, under the dread of His sovereignty or the apprehension of his displeasure, and which, in its truest and most genial form of filial awe, forbids the very thought of offense. The power of this instinct is most impressively shown when, as in some deplorable instances, its first monitory warnings have been disregarded, and its terrific reäction drives reason from the throne of intellect, or haunts a death-bed with horrors.

(4.) *The desire of Enjoyment*—which, in infancy and childhood, tends to seek for gratification in the sphere of the sentient nature in its animal relations, rises to intellectual and moral action, with progressive development, in subsequent stages of life and character, till it becomes the conscious pursuit of even the highest happiness of humanity, exalts successively the aims and endeavors of man to his utmost elevation of moral action and character, and stamps itself as one of the most powerful agents in the advancement of his being.

(5.) *The desire of Power.*—No attribute of his nature more distinctly marks the character of man as a progressive being, than that love of power which actuates the very infant in his attempts to stand, to walk, to speak, to put forth efforts of muscular force. The child, the boy, and the youth, all evince the activity of this principle, in the conscious ambition for progress and advancement by which they are impelled to earnest endeavor and arduous exertion, physical, intellectual, and moral. The sense of power is, in every stage of human life, one of the strongest feelings of pleasure of which man is conscious. In the maturity of his powers, it crowns his endeavors to explore the worlds of nature and of thought, to achieve the miracles of perfect art, to attain to positions of affluence or of rank, to enjoy, in whatever form, the splendor of greatness. It prompts man, at every stage of his being, from childhood onward, to aim at the relative manifestation of power which is exhibited in superiority over others, in the ability to control, direct, and sway the minds and actions of his fellow-men. This instinct of his nature becomes an element of immense productive force for evil, when perverted; although, when prompted by benevolence, and restrained by justice and rectitude, it has occasionally made men the benefactors of their race.

(6.) *The desire of Estimation.*—This principle which, in childhood, is manifested in the desire of love and approbation, becomes, in the adult, a love of esteem and respect, and, so far, is unquestionably a worthy motive power, and one which, subordinated to conscientious integrity and honor, elevates the character and prompts to benevolent action. When it degenerates to mere love of fame and applause, or sinks to the miserable desire for distinction or mere notoriety, its effects are, of course, as degrading as in its purer forms, it is ennobling. In any form, it is an element of peculiar power in man's moral constitution.

(7.) *The desire of Society.*—This principle man partakes with the gregarious races of animal life. It manifests itself in the clinging desire for sympathy and association, characteristic alike of infancy, childhood, and youth. It becomes, in manhood, the foundation of social and civil life, widens the sphere of the individual, and amplifies his being by the sympathy, the intelligence, the material and moral aid of a whole community of his fellow men. As an element of human progress and power, it ranks among the strongest and the most ample of man's moral resources.

(8.) *The desire of Freedom.*—In the stages of infancy and childhood, and of immature life generally, the instinctive desire to throw off restraint, and to enjoy liberty of action, is the natural expression of that native desire of development which impels the progressive human being in every direction that promises the pleasure of conscious effort and power. Partaking, however, of the partial blindness attributable to all forms of mere instinct, it needs the direction and guidance of faculties higher than itself, to constitute it a uniformly safe element in activity. But as it is capable of employment in the service of man's best rights and interests, and, in that capacity, has achieved some of his noblest triumphs for intelligence, virtue, and happiness, it takes justly a high rank among his moral capabilities, as an indispensable condition of development and progress.

6. THE PRIMARY EMOTIONS, *as Moral Powers.*—Sensibility, the susceptibility of feeling, the great source of moral life, presents its numerous family of emotions as constituent members of the group of moral powers and faculties by which man is rendered capable of meliorating culture and spiritual growth. Emotion, as the manifestation or expression of feeling and affection, is not merely the natural language of the heart, rendered visible or audible, but in virtue of the law of sympathy and mutual incitement, existing in the various faculties of the soul, it is itself a vital moral element reäcting with a powerful augmenting force on the source whence it springs. As an inner movement of the soul rendered legible, it has, in many cases, become, by universal consent and usage, a synonym for the interior condition whence it originates, whether in the quiet moods of serenity or the turbulence of passion.

(1.) *Joy.*—One of the earliest feelings manifested by look and action, in the infant stage of life, is that joyous emotion which constitutes, so largely, the happiness of animal existence, in all its earlier conditions. The genial nature of this emotion is indicated in the intense gratification which it evidently yields to its immediate subject, and which, by the law of sympathy, it diffuses to all sentient natures within its sphere. From its lowest forms of serene *complacency*, to its more positively marked degrees of *animation* and *cheerfulness*, its higher expressions of *delight*, of *gladness*, and *hilarity*, or its more sedate and lasting satisfactions, in the mature sense of *happiness* which attends true enjoyment, its influence on life and health, on conscious feeling, on temper and disposition, on the whole intellectual and moral nature, is, in the highest degree, salutary; while undue devotion to its influence precludes the possibility of benefit from those deeper and more lasting pleasures which flow from serious thought and earnest purposes. Mirth, habitually indulged, leads to habitual levity and frivolity, and foregoes the distinctive dignity of man. The healthy and genial inspiration of joy, however, even intelligent educators are sometimes prone to forget, is, in all the relations of moral condition and moral cultivation, one of the strongest influences to which the young mind, by the law of its constitution, is peculiarly subjected as a vital element—the oxygen, of its spiritual atmosphere.

(2.) *Sorrow, grief, regret, .repentence, remorse.*—These emotions, diametrically opposed, in all their effects, to the genial influence of the preceding, are to be eschewed as permanent educational elements in any normal plan of early training; yet they have their salutary office in abnormal instances, in softening obdurate hearts, and subduing obstinate wills, or in awakening torpid and dormant intellects. Their office, in the business of education, is that of exceptional remedies for exceptional evils: they are punitive and reformatory in their character, rather than genial and preventive. They belong not to the primary stage of nurture, but rather to the secondary one of discipline. Still they are sometimes of the greatest value, when they spring from ingenuous feelings of regret for conscious error, or self-reprehension for conscious faults. It was once most happily said, "The tear of contrition serves to wash the mote of sin out of the eye." The hour of grief is that which enhances the value of consolation. The blameless sadness of the young heart calls for the gentle soothing of the voice of affection. Sorrow for deplorable losses blesses the voice which can say, in genuine sympathy and cheering kindness, "Let not your heart be troubled!" The moment of "the heaviness of the countenance" is sometimes that in which "the heart is made better," by detaching it from the burden of conscious evil, and preparing the will for the better course of a new life. In such circumstances, the judicious aid of the attentive educator may assist in the inauguration of a new moral era in the personal history of the pupil. Even the rougher and severer discipline of repentance and remorse becomes, to the hardened adult, a minister of mercy, when it wrenches the sinner from the thraldom of evil habit, and sets him free from the "bondage of iniquity."

The moral power of this whole class of emotions—from the unaccountable cloud of depression which sometimes steals over the sunshine of the young heart, to the deepest plunge into the darkness of remorse—is peculiarly marked for its efficacy in the renovation of feeling, and even of disposition and character. In the sphere of the family and the school, it sometimes marks the record of the day's history with the beginning of a salutary reformation of temper and deportment. But, in the imperfections of human management, it sometimes is permitted to mark the commencement of a reäctive sense of wrong, when the feeling is unjustly caused by arbitrary or erring authority. It then becomes a power for lasting evil.

(3.) *Timidity, fear, terror.*—Like the natural aversion to pain, these instinctive emotions, which are so easily excited in childhood, bespeak the guardian care of the Creator, in his gracious provision against danger, and consequent destruction to the organic frame, or to the mental constitution. They are the swift preventives of evil, the safeguards of humanity in peril. But the vividness of childhood's emotions needs the aid of the guardian auspices of education to prevent a salutary instinct from degenerating into unreasoning excess, and to protect the mental and moral nature from the paralyzing effect, which, in unhappy instances, has extended to the overthrow of reason itself. The timidity of childhood may, if not watched over, become habitual self-distrust, embarrassment, confusion of thought, or even moral cowardice. Wisely guarded, it may be converted into a protection from rashness, presumption, and foolhardiness. Fear may be sometimes needed as a restraining influence on forwardness and impudence, or as a check upon daring hardihood, in resistance to authority. But its influence is unfriendly to the healthy development of disposition and character. It never rises to the dignity of an aid to the development of principle. It may aid in producing a vivid apprehension of coercive and compulsory measures, and so lead to obviate their necessity. But its low rank among instincts, its semi-brutal character, at best, place it among the motives which a generous educator would ever despise. If called in, for a moment, to quell resistance to authority, it yet can never attain to the dignity of a genuine moral influence. Expediency may sometimes sanction the appeal to its effect, as a matter of necessity. But, if admitted at all into the circle of moral relations, it can not be ranked higher than among the abnormal. As for its extreme form, terror—humanity, at the present day, forbids any resort to it, as a moral expedient. The peril of insanity lies too close at hand to permit any human being to adopt it, even as a means of deterring from evil. Its only salutary use is its instinctive office to prompt the instant flight from peril to life itself. So, and so only, does it prove a benefit.

(4.) *Indignation as a moral sentiment.*—The intelligent moral instructor will, of course, carefully guard his pupils from confounding this principle with the mere animal emotion or passion of anger. Anger is the mere personal reäction of maddened feeling and blinded reason, which man is capable of in common with the brutes, and which vents itself in violence on the agent of injury. Indignation is that impersonal sentiment which regards not the agent but the act, which makes the young heart glow at the sense of wrong, when the teacher is relating an instance of oppression or cruelty, which occurred, perhaps, ages ago, and in some distant land. This species of resentment is a purely mental thing, a salutary and ennobling emotion of reäctive sympathy, which belongs to man as a being consciously endowed with free agency, and equally abhorring a condition of unjust subjection, and the oppression which causes it—

as a being instinctively impelled to oppose and overthrow every palpable form of evil which besets the condition of humanity. Indignation has inspired many of those peaceful revolutions which have renovated the social and moral condition of communities, more frequently than it has originated those bloody revolutions which have sometimes been the birth-throes of national life and liberty.

(5.) *Wonder.*—Among the first indications of mental life, in childhood, is the emotion of wonder, which, at that stage of human progress, is so often called forth by the novelties of observation and experience. The freshness of feeling which it indicates, and the manifest delight attending it, show plainly its power as an element of mental life and moral activity. This emotion, judiciously evoked and skillfully cherished by the watchful educator, becomes not only a genial and a powerful incentive to intellectual exertion, but the tribute of the young heart on the altar of the yet "unknown God," who is waiting to be, in due season, revealed to intelligent faith. The wonder which the novelty of all created things raises in the dawning consciousness of childhood, is the preparatory stage of the intelligence and reverence which are afterward to blend in the soul, as it rises to the recognition of the Author of life and the Giver of its law of duty.

(6.) *Awe.*—This emotion transcends that of mere wonder, and thrills the soul with a profounder sense of power, whether exhibited in the tremendous forces of nature, in its astounding aspects of elemental commotion, as in the heaving fire of the volcano, the dashing billows of ocean, the rush of the cataract, the blinding flash of the lightning, the roar of the thunder, or the fury of the tornado, or in the calmer majesty of mountain forms, the overwhelming vastness of impenetrable forests, or the immeasurable depths of space. As a moral inspiration, it aids the feeble faculties of man in his attempts to dwell upon the conception of almighty power and eternal duration; and while he must ever sink consciously baffled in all his attempts to comprehend Him "whose greatness is unsearchable, and whose ways are past finding out," yet he never feels more vividly the greatness of his own nature, limited though it is, than when losing his human littleness in the contemplation of the great and marvellous works which bespeak the majesty of Him who is "the same yesterday, to-day, and forever."

This overwhelming and yet ennobling emotion, education has it for one of its special offices to deepen and expand by all the aids which nature and science furnish to the inquiring mind of man. Its influence is doubly salutary, as it prostrates the human being in conscious insignificence before his Creator, and, at the same time, exalts Him who is the "Majesty of heaven and earth."

(7.) *Hope.*—As an intelligent inspiration, of intellect, heart, and will, in activity connected with the sense of duty, hope, the expectation of success, becomes an element of high moral value and power.

It is congenial with the conscious happiness of being which naturally belongs to the joyous associations of early childhood, and, indeed, of young life in all its various stages. It inspires and sustains the aspirations of boyhood and youth, and invigorates the exertions of manhood. It is a silent tribute from the heart of man to Divine benignity; and when elevated and hallowed by faith, it rejoices in the anticipation of a future life of perfect felicity. Its rank, and its efficacy as a moral influence, constitute it one of the highest powers by which man's moral nature is actuated.

7. The Benignant Affections, *as elements of moral life and power.*—(1.) *Love.*—By the great pervading attribute of sensibility, inherent in his constitution, man learns to feel his condition before he knows it, and to sympathize with his fellow-beings before he is capable of understanding them. The law of *Sympathy*, written on his whole nature, as a primary element of his being, which ultimately developed into every form of social and benevolent feeling, brings him, unconsciously, at first, under the dominion of the paramount law of *Love*, which attracts him toward his fellow-beings by a genial and kindly influence which he delights to feel, and which, as his conscious intelligence gradually unfolds itself, he learns to understand as mutual and reciprocal. This mysterious power ties the heart of the infant to that of the mother, and that of the mother to the infant with an affection stronger than life. In the little community of home, it links the souls of brothers and sisters in fraternal union of affection. It is the sacred law of parental and filial duty, and moves the whole moral machinery of human life in its hallowed and blessed sphere of privacy.

There virtue has its purest forms and dearest aspects, its genuine, spontaneous amenities; and though unknown beyond its own quiet sphere, has its own unseen record of generous self-sacrifice, and of fortitude more than heroic. Among the noblest motive powers of moral action, the affections of home are those to which the enlightened educator will ever assign the highest place, as regards the capabilities of the human heart for living development.

(2.) *Gratitude.*—This peculiar benignant reäction of love, in view of favor or kindness experienced, mingles largely with the exercise of filial and fraternal affection, and enters into every emotion called forth by the consciousness of benefit conferred, in whatever degree—from the ordinary acts of human kindness and courtesy, to those greater expressions of benevolence, which bestow safety or comfort and happiness, in valuable and lasting forms of beneficent action. This generous emotion is not always accompanied with the satisfaction of being able to remunerate a benefactor by any adequate return. The service or the favor which calls it forth, is sometimes greater than language or action, or any form of external expression, can equal. It may be sometimes so great as to prompt the devotion of a whole life to the friend or benefactor toward whom it is directed. Such is true filial attachment. Such is man's position toward his Creator.

The promptings of this generous emotion lead, sometimes, to the noblest manifestations of true sensibility and self-renouncing devotion. Some of the brightest passages on the page of history are those which record the heroic actions to which this feeling has given birth.

In the relations of education, its influence on the ingenuous mind and heart of youth, forms one of the most sacred attachments of human life. A grateful feeling of returning love for the guardian mental care which, in our early years, watched over, and served to form and mould within us, the ideal image of excellence at which we were taught to aspire, the filial reverence which the heart, in such circumstances, so gladly pays as a tribute to wisdom and worth, insure the inspiration of the noblest aims in all subsequent life, to the heart which is conscious of them.

8. THE GENEROUS AFFECTIONS, *as Moral Powers.*—(1.) *Friendship.*—The cordialities of disinterested friendship, and the mutual good offices of human kindness and reciprocal obligation are but expansions of fraternal feeling from the primary sphere of home; and their efficacy in promoting human well-being, on a broad scale, render them powerful instruments of good, as well as rich elements of moral life in the heart.

(2.) *Patriotism.*—On a yet wider field, patriotic attachment and principle, as they cherish the generous spirit of self-devotion, give ample scope for the cultivation of the virtues which adorn and dignify human life. The noblest pages of history are those which exhibit the magnanimity of genuine patriotism. As a feeling of the heart, or a principle of duty, this sentiment possesses peculiar power in inspiring man to noble deeds; and as a spring of development to personal character, it must ever rank high among the moral capabilities of man.

(3.) *Philanthropy.*—The expansive feeling which embraces the whole human family in the wide open arms of brotherhood, is a virtue yet more disinterested, and more true to God and man, than even the truest and the warmest patriotism. It is eminently the Christian's virtue, so far as he is true to the teachings and example of Him who came to proclaim "good will to men," and charged his followers with a message of love to "the whole world." The history of genuine Christianity is chiefly the record of those who went forth on this errand, "with their life in their hand," and who were ever cheerfully ready to deposit it in pledge of their devotion to the well-being of "Barbarian, Scythian, bond, or free."

Among the powers which characterize man as a moral being capable of culture, and of advancement in the scale of excellence, no trait of disposition gives larger promise than this; and on none does humanizing culture produce larger effects.

(4.) *Humanity toward Animal Nature.*—As the offspring of Divine love, the human spirit, though its lustre has been dimmed by the breath of sin, yet retains something of the characteristic benignity of its Source; and the range of its benevolent sympathy is not limited to the circle of its fellow beings, but flows forth, if not unnaturally diverted from its channel, to the wider sphere of universal being. In its relation even to the humbler races of the creation, which have been subjected to its dominion, by the appointed gradations in the scale of life, it manifests itself capable of a beneficence for which the designation of "*humanity*" has been suggestively chosen.

The universal law of Love, if obeyed, expands and elevates the soul of man to that moral comprehensiveness of being which ranks him "but little lower than the angels;" and while he is thus permitted to see "all earthly things put under his feet," his crown of royalty is indeed one of "glory and honor," because it invests him with the conscious responsibility of an intelligent and moral sovereign. This true majesty of man is the source at once of his just self-respect, and of some of his noblest regal attributes and virtues, to cherish and confirm which is among the special offices of appropriate human culture.

9. Religious Principle, *as a Moral Power.*—(1.) *Reverence.*—The feeling of which the young mind is conscious, as one of the dawning intimations of the development of its own reflective powers, when contemplating the dignity, the authority, the wisdom, and the benignity of the parental character on which it consciously depends for being and happiness—is although not yet fully or distinctly developed to its own consciousness, one of the profoundest emotions of which it is susceptible; and to the unperverted heart it is one of the strongest cords of sacred obligation by which it is bound to all filial duty.

The emotion thus experienced is naturally transferred, by the mind's law of association to all forms of venerable human worth and dignity. It is called forth by the wisdom of age, by nobility of character in exalted station, and, in degree, by all authority justly exercised. It marks alike, in such circumstances, the deportment of ingenuous youth and of true manliness. Its indications in the intercourse of life are the assurance of that susceptibility by which judicious cultivation, and the inspiration of a genuine faith, are enabled to lift the human soul in reverence to the Father of spirits, and to create a sacred regard for all that Divine truth reveals as duty. Its value as an element in moral cultivation, is beyond expression, great, as regards its influence, whether in securing the respect and obedience due to parents and teachers, to seniority in years, and to eminence in attainments, or in conferring on education itself, its true character as a sacred relation in the business and duties of life, and as a connecting link in the chain which gives unity to man's being in its extension to a higher sphere of mental and spiritual existence.

(2.) *Faith.*—Another element of the highest power in moral relations is the Faith which believes and trusts, and thus unites man to his fellow man, and man to the Author of his being. A great writer has denominated this principle as that "which holds the moral elements of the world together." Without it, man is an isolated, helpless, hopeless outcast, wandering on the shores of being without aim and without direction, ready to be "swallowed up and lost," at the end of his brief career of earthly life.

Faith is the source and spring of all moral life, and, as a capability in the relations of culture, its productive power is comparatively inexhaustible, or limited only by the measure of endeavor. It lifts man above himself, and supplies him with a power beyond his own. It gives the parent and the teacher an influence nearly unbounded. In its highest form, it solves, with light from above, the great Christian paradox, "When I am weak, then am I strong."

(3.) *Conscience.*—The primordial moral element which holds sway over all man's powers and faculties, is Conscience. This great regulator of the springs of action no competent educator can ever permit himself to regard in the merely popular light of a reporter and penal officer, following the acts of which it takes cognizance only after they have been committed, or irretrievably determined. As the sense of duty, it presides over the whole mental being. As an intelligent agent, it partakes in the work of consciousness and reason. It knows and judges. It remembers, indeed, with fearful exactness, the deeds of the past. But it has also the eyes of intuition and of inference for the present, and the power of prospection, prediction, and suggestion for the future. In feeling—unless blunted or extinguished—it is sensitive, to the utmost degree of acuteness; and it pierces to the very "joints and marrow" of the moral organism. Its cautery is terrible in its unsparing intensity. By Creative ordination it is paramount to the will. It prompts, and threatens, and remonstrates, and commands, and forbids, and impels or deters, with absolute authority;—irresponsible to any higher power within the whole domain of humanity, and acknowledging none without, but the one supreme authority of God and duty.

As an intelligent sentiment, and determining principle, it sums up man's moral capacities and powers in their whole extent of life and action. It constitutes him what he is in the sight of God, and in his own consciousness—a responsible moral agent, whose motto, written on his inmost being, is "*Be perfect.*"

Under the prompting influence of conscience, as the law of duty, appointed by the supreme lawgiver, a devout regard to His authority, and a grateful sense of His benignant care, the young mind, enlightened by the teachings of "the wisdom which cometh from above," is betimes elevated to that *piety* toward the Father of all, which raises the personal worth and virtues of the human being, in his aspirations, to the height of sanctity, carries up all questions of moral action to the highest of all tribunals, and breathes into all his endeavors of duty the inspiring breath of a spiritual life and a divine power. Most justly did the fathers of New England require of the teacher of youth that he should regard himself as specially set apart for the "nurturing" of childhood in "piety," as the security for all those virtues which insure the safety of a community and are the adornment of humanity.

10. THE WILL, *as a Moral Power.*—Man's ability to determine the moral course of his actions, to choose the right and avoid the wrong, can never be made clearer to himself by the light of "science falsely so called," than it is in his own inmost convictions. It never is obscured to his consciousness till, wandering from his limited sphere of possible conception, he bedims it by some cloud of metaphysical speculation, and perplexing casuistry—"darkening counsel" by "skeptical doubts" and "words without knowledge." Conscience, the only competent court, adjudges him free, innocent or guilty, commendable or culpable, in every act within the limits of his power, yet—for that very reason, not independent of the authority which pronounces sentence on his actions, and which involves the existence of an authority higher than itself, to which he is strictly responsible, here and hereafter, though at liberty now to follow the bent of his individual will. To the doings of this determining and executive power. which directs and moves the arm, whether it is stretched forth to succor or to kill, attaches, then, a moral character of fearful power; and to influence it for good, and not for evil, to guide it in the path

of rectitude and benevolence, is the appropriate work of education, as the guardian of human welfare.

11. THE PRACTICAL VIRTUES, *as Moral Powers.*—High among these attributes stands *Rectitude*—that power of self-adjustment by which man corresponds to the dictates of conscience, as the sense of right, which keeps him true to his position in the moral universe—true in thought, word, and deed, to the posture in which his Creator placed him when He "made man upright." This principle confers on the human being that noble power of self-poise, which bespeaks his dignity, as a free agent, endowed with the ability, to maintain his moral identity and stability, amid all the fluctuations of circumstance, or the plausible solicitations of evil. It tends to render him sacredly regardful of *truth* in all his communications with his fellow-beings, and of *equity* and *justice* in all his transactions. It stamps his character with *integrity* and *honor*, in every station of power—with *fidelity*, *honesty*, and *punctuality* in the discharge of every obligation of duty. Truthfulness, is, in a word, the one sure and firm foundation of every personal virtue, and the only ground of reliance between man and man. Without the security which it affords, the whole fabric of human society would be but a hollow structure of falsehood and hypocrisy, and life but a degrading scene of deceit, imposition, and intrigue, issuing in universal corruption and misery.

A sacred regard to truth, in all its relations of communication, whether in expression or action, while it is an element so indispensable to the existence of human virtue, in any form, is one which more than most others, is a growth of culture in the soul, and peculiarly needs the genial guardianship of watchful care, mature wisdom, and consummate skill, on the part of the cultivator. The fertile imagination and artistic fancy of childhood, are prone to create a world of unreality around the unconscious spirit, in its immaturity of knowledge and experience; and a guiding mind is ever needed to lead it onward to a distinct perception of the sacred beauty which invests the simplicity and severity of truth, and which renders any conscious violation of it a desecration. The force of truthfulness, as a moral principle, when so directed and matured, is seen in that loyal and devoted adherence to its dictates, which is exhibited in the constancy and genuine heroism of the martyr. In his estimation, it is held dearer than life, no intensity of pain or suffering has the power to wrest it from him.

12. THE HUMANE AND GENTLE VIRTUES, *as Moral Powers.*—Under this designation may be properly included those traits of disposition and character which soften the heart of man to his fellow man—

the *sympathy* which is not a mere passive condition of feeling or organic susceptibility, but a living, active participation in the emotions evinced by our fellow creatures; leading us to *rejoice* in the happiness of others, to *compassionate* them in conditions of want and distress, to *commiserate* sorrow and suffering, in every form—ignorance, error, degradation, vice, and every pressure of evil which afflicts or depresses humanity;—to cherish the catholic spirit of universal *charity*, *tolerance* for the sentiments which differ from our own, uniform *tenderness* toward woman and childhood, *calmness* under irritating treatment, *meekness* under a sense of wrong, *quietness* and *mildness* with the violent, *patience* and *forbearance* with waywardness and opposition and injury, *pity* for the erring, *mercy* for the evil-doer. All these godlike traits of disposition are the features which characterize the peculiar spirit of true Christian culture; none of them the mere fortuitous products of a happy constitution of body or of mind, but all earned by ceaseless watchfulness, and diligent endeavor, and, sometimes, by arduous struggles, and none of them perfected without aid from on high.

13. PERSONAL QUALITIES, *in their Moral Influence: The Self-asserting and Self-sustaining Virtues of the Individual Man.*—(1.) *Self-respect.*—As a being created in the high sphere of intelligent and moral existence, and possessed of an immortal nature, man enjoys, in a just self-respect, a security against degradation by any influence which he feels to be unworthy of the rank assigned him in the universe. Consciously noble in origin and destination, he tends, if not perverted or degraded by habit, to noble action; and if, in the plenitude of Divine favor, he is consciously recovered from a fallen condition, he feels it his immunity, as "a new creature," to have been liberated from a state of bondage—set free for the enjoyment of a "glorious liberty," and impelled to run a new and noble career. Respect for his own nature and personal condition—when kept pure from the senseless interminglings of pride, or haughtiness, or arrogance, of overweening self-esteem, or exclusive self-regard—insures to man the proper dignity of his being, and tends to elevate all his aims and actions. It is an element of high moral power; and the judicious cultivation of its influence is a prominent duty of all whose office, as educators, constitutes them the guardians of humanity.

(2.) *Ambition.*—Feeling the nobility of his nature, man, when not hopelessly degraded, instinctively seeks to act in harmony with his conscious position, and, under the influence of ambition, to aspire after advancement, in every stage and relation of his life. This desire may, it is true, be suffered to center on merely selfish purposes—on the personal aggrandizement of an individual, to the exclusion or depression of others, and to the violation of their rights. In such cases, it sinks to the level of that brutal greed which prompts one of the inferior animals to usurp the better place at the trough, and monopolize its advantages, to the exclusion of the weaker members of the herd.

But the desire of advancement, as that of progress and attainment, is utterly free from all considerations of relative superiority or advantage. It is obedience to an ennobling instinct, pure in its character, and beneficial in its results, not merely to the individual whom it elevates, but to all whom it enables him to aid from the higher sphere of ability to which he has been raised. To the student it is a most powerful incitement to application and exertion; and in the relations of moral attainment, its influence is a salutary inspiration of the highest order. It is not incompatible with the purest spirit of benevolence, in the largeness of the plans on which it delights to work, and the inestimable value of the benefits which it delights to bestow. It urges the Christian aspirant to "press toward the mark," "for the prize of his high calling," and incites him by the promise of a "crown of life."

(3.) *Magnanimity.*—Ambition naturally tends to generate another personal quality of noble character and influence—that magnanimity which lifts man above the littleness that would limit the scope of life, and fritter away its purposes in paltry pursuits, in trivial employments, or low gratifications, in snatching at mean advantages, or mingling in petty strifes. This ennobling virtue incites its possessor to high aims in all his plans and purposes, and to an utter disregard of meanness in motive or action, as manifested by others toward himself. It overlooks malice and injury, or forgives their results. It disdains revenge. It is a sure preventive of that sordid narrowness of soul which induces man to drudge, throughout life, for the mere purpose of accumulating wealth, or to practice the degrading shifts of a niggardly parsimony in expenditure, through fear of diminishing his hoards. A magnanimous spirit scorns the selfish littleness which thus wraps the individual in himself, and shuts the door of his heart against the natural claims of human brotherhood. It gives a generous breadth to measures of usefulness and benevolence, and raises human activity to a higher sphere and ampler scope in all directions.

(4.) *Resolution.*—This attribute, so important in all the practical relations of life, implies the clearness of perception and readiness of judgment in consequence of which the will is empowered instantaneously to decide the course of action. Hence the certainty and the swiftness with which execution follows purpose, the invaluable habit of promptness and dispatch in business, and of punctuality and efficiency in performance, as contrasted with the lagging irresolution, and halting, unavailing endeavor, which invariably issue in failure and disappointment.

The power of energetic and decisive resolve determines, at once, the practical value of an individual, and the reliance which may be placed on him by others. It determines, in fact, the mental health and moral life of the man, the efficacy of his action, and the estimation of his character.

Many constitutions are so formed that even this trait of mental freshness and vigor, so natural to early life, in general, needs diligent cultivation to secure its due development in particular cases. The dreamy indolence, the languid inactivity, the tendency to aimless reverie and absence of mind, which proceed from organic feebleness, wear the same aspect with the profound abstraction of deep and earnest thought, and thus excite, perhaps, in the mind of the parent or the teacher, the expectation of the fruits of close thinking and severe application—an expectation sure to be disappointed. The irresolute youth is prone to sink into habitual vacancy of mind, indecision of purpose, vacillation and feebleness of judgment, sluggishness and utter inefficiency of will.

(5.) *Courage.*—A kindred quality of soul to power and promptness of resolution, is that genuine courage which man, as a self-reliant and independent agent, is naturally called to exert; and which, as a being of conscious energy and power, by his very constitution, is one of the primary instincts of his nature. It enables him to assert his place in the creation, as an agent intrusted with dominion, to a vast extent, over nature and circumstance, and destined to a high position by the exercise of his peculiar endowments. It protects him, at the same time, from any undue ascendency usurped over him by a fellow-man. It prompts him to oppose and resist every encroachment on his rights, and to imperil life itself in defense of his natural liberty of action. It nerves him to encounter danger, to triumph over obstacles, and to master difficulties. It lightens toil, and facilitates attainment.—It gives to the energies of individual mind and will the comparative force of numbers. It enables man to achieve miracles of physical strength and moral power, not merely on the field of conflict, or under the gaze of admiration, but in the solitary grapple with physical obstacles, and the daring, unassisted encounter with the fury of the elements, when the lone adventurer hazards life on some far errand of scientific or humane exploration. In its higher relations, as a moral attribute, it inspires the individual to attack usurping or even approaching evil, in its most formidable shapes, and to encounter fearlessly opposition and opprobrium, and death itself, in the cause of truth and duty.

Courage may, it is true, degenerate into inconsiderate rashness or fool-hardy temerity, and prove itself but a blind animal impulse. It is the office of education to enlighten and elevate it, and render it a ministering spirit of good to humanity, inspiring it with intelligence, and hallowing it with the sanctity of benevolence; so that it may become worthy to fulfill its highest offices, and lead the van in noble endeavor for the advancement of human well being. Its moral power and value then become incalculable; and to cherish it is a peculiar duty of the educator.

(6.) *Fortitude.*—A virtue yet higher than even the noblest form of courage, is that *Firmness* to sustain, to bear, to withstand, to endure, or to resist every pressure of pain and of suffering which inevitable evil may call him to meet and to undergo. Along with this upholding power usually comes the *equanimity* which preserves from extremes of elation or depression, and maintains the moral identity of the individual, the *patience* which soothes and tranquilizes, and coöperating with the enduring firmness of its kindred virtue, contributes to that calm *self-possession* which leaves man master of himself, and equal, in his native greatness and acquired abilities, to resist the assaults of evil, and bear the double pressure of toil and pain with unshaken firmness.

These arduous virtues are, in no sense, innate, or constitutional merely: they are the fruits of diligent and persevering culture—the attainments of the trained and practiced spirit. They owe their power to that self-education which, although it may be wisely anticipated, must ever, in substance, be purchased at the peculiar price of personal experience and strenuous endeavor.

(7.) *Perseverance.*—Another quality of high rank as a moral power, and closely allied to the preceding group, is the persistent firmness of purpose which follows so worthily in the track of dauntless courage, and enables man, with the aid of time, to accomplish, in life-long battles with external nature, those wonders of triumphant human energy which inspire successive generations of the human race with mingled admiration and awe. It is the same trait of persistent resolution that has enabled communities to struggle, for successive years, for a foothold among the family of nations, and to endure, to the verge of extinction, for independence. The same element sustains the explorer of nature, in his years of solitary exposure and unmitigated hardship, through toil, and sickness, and peril. The same sustaining power cheers the secluded student onward through his labyrinths of exhausting investigation, pursued year after year, without aid or sympathy, yet never abandoned till some glorious discovery, duly verified, crowns his devoted loyalty to science. Indefatigable perseverance, in the face of opposition and accumulated difficulty, has been the condition of success in many a noble effort of philanthropy, in its devoted endeavors to alleviate the miseries of suffering humanity, by meliorating its outward conditions, enlightening its mental darkness, or inspiring it with the elements of a new moral and spiritual life.

Without the sustaining power of this attribute, no undertaking of moment has ever succeeded, in the experience of individuals or of communities. Yet it is a quality in which the young mind, in its eager desire of novelty, and its need of alternations of activity, is more deficient than it is in that which prompts to the most arduous attempts or heroic efforts. The vigor which manifests itself in firm adherence to plan or purpose, is usually acquired by degrees, under skillful training. But, when attained, it stamps the seal of certainty on whatever human endeavor is competent to effect.

(8.) *Self-government.*—This invaluable trait of cultivated character implies, in the individual who possesses it, the skill and the mastery acquired in the training schools of conscience, magnanimity, resolution, courage, patience, fortitude, and perseverance. It implies all these qualities turned inward for the control of self. Destitute of self-command, man, when brought to the test, is but as the infant, or the lower animal—the mere victim of passion and impulse. The main moral element of character, is, in such cases, wanting; and the individual sinks in the scale of being, not only in its moral, but its mental relations. The exigencies of life which try men's souls, and demand the perfect action of all their faculties, exhibit the inexpressible value of this trait of mental and moral power, by which man is enabled to call into activity the nobler elements of his being, and, by their authoritative mandate, control and restrain every lower tendency of his nature. He thus reigns in moral sovereignty over himself, and reveals the true majesty of manhood; while, in loyal subordination to Divine law, he manifests, not less impressively, the moral beauty of the spirit of filial obedience.

The power of *self-direction* and *self-guidance*, which that of self-government implies, enables man, as an intellectual agent, to concentrate the activity of his whole mental being, on whatever solicits his thoughtful attention, or tends to promote or enlarge his intelligence. In the moral relations of his being, it secures him against the allurements of evil, the eruptions of passion, the wreck of his peace of mind, or the moral ruin of degrading habits.

Education, in its common forms, it is true, can do little by mere external precautions, admonitions, or promptings, to confer the personal happiness which it is the peculiar office of self-government to bestow. Self-intelligence, self-experience, and self-culture, and the sanctity of religious principle, are, in this relation, the only sure reliance for human virtue. But when thus grounded and rooted, it becomes the firmest security for every trait of excellence.

(9.) *Self-reliance* is the moral reward which man becomes entitled to reap from the conscious power of self-government; and, within such limitation, it is the pledge of many of the distinguishing traits of manly virtue. It may, without the genial guidance of education, become over-weening confidence and presumption. But rightly developed, it is the proper result of faith in the attributes conferred on man's nature by the Source of his being, in virtue of which he is rendered competent for the station and the duties assigned him, as an intelligent, but responsible moral agent. The conscious feebleness which induces infancy and childhood to rely on the power on which they feel they are dependent, is a natural and appropriate influence. But in the history of the moral progress of the human being, there soon succeeds a stage, in which for the highest purposes of life and character, he is weaned from the helpless condition of dependence on others; and self-intelligence and self-respect consciously demand the independence of self-exertion and self-reliance. A manly spirit of just confidence in conscious ability, never inconsistent with the crowning grace of modesty, secures the sincere respect of all who themselves feel the dignity of manhood, whether in its dawn or its maturity. It is an indispensable element in personal character, as the pledge of courageous enterprise, and persevering application, of firmness of purpose, efficient exertion, and final success, in whatever the sense of duty, or a just ambition, prompts the aspirant to attempt.

14. THE SELF-RENOUNCING VIRTUES.—The dependent condition of childhood suggests the indispensable relation of habitual *obedience* to parental and guardian authority, and unquestioning *submission* to requirements which the young mind may not always be able to comprehend. The unity of plan and administration, and the perfect *subordination*, which even the imperfect vision of the human eye can distinctly trace in the arrangement of the visible creation, suggest to the reflective mind the universal prevalence of Law, as the prominent feature of Divine government. Order, and system, and gradation, which man sees inscribed on all things around him, and to which he is conscious that his own mind is an analogous agent, he feels to be indispensable in his own sphere of action. He recognizes them as prompters endued with a wisdom and anthority above his own, and as the legitimate directors of his whole course of action. From the habit of early subordination, acquired under the guardian care of education, when rightly conducted in the sphere of home and school life, the self-intelligent mind, in its maturity of Christian growth,

learns to recognize the paramount claims of Divine authority to unhesitating obedience and cheerful submission, in the spirit of filial confidence and love, even when patient *resignation* to ordination not understood is the duty of the moment, and the utterance of the trusting spirit to its Author can only be, "not as I will, but as Thou wilt."

In the relations of human intercourse, the *Modesty* which feels what is due to others as exceeding the measure of merit in self, is no less surely an attribute of true nobility in man, than the self-reliance which forbids a feeble dependence on others, or a weak, subservient compliance with their arbitrary wishes. A sincere *respect* for just superiority, indicates the open eye for excellence, as manifested in the attainments and actions of others, and a full recognition of the true worth and genuine merit embodied in their character or conduct. It is the rightful homage of the heart, which ennobles, and never degrades. It restrains presumptuous self-confidence and arrogant assumption, and accepts, in true nobleness of spirit, that lower relative position which conscious immaturity, or inexperience, or limited attainments justly assign. It constitutes the docility of childhood and youth, and not less that of the mature student of science, who loves to sit at the feet of a competent instructor, and treasure up his words of wisdom.

The true dignity of man, as an intelligent and moral being, while it secures his personal independence, and his equality, in the sight of God, with every individual of the race, is by no means inconsistent with that profound respect for man, as the offspring of the Father of spirits, which generates *humility* of spirit and deportment, between man and man, forbids all assumption as usurpation, arrogance as injury, and haughtiness as insult, and yet knows how to meet them with the gentle spirit of Christian meekness. True humility deems no office of kindness too low which can minister to the welfare of a fellow being, whether the beneficent act be gratefully or thoughtlessly received. The perfect model of this virtue exhibited by Him whose spirit was so lowly that he condescended to wash the feet of his followers, was nobly copied in the heroic explorer[*] who did not disdain to perform the lowest of menial offices for his suffering crew.

The spirit of *condescension* which shuns all parade and formality in intercourse with the young and the dependent, and easily and gently glides into sympathy and due familiarity with all worthy fellow beings—which skillfully breaks down every "middle wall of partition" between man and man, and knows how to "condescend to men of low estate," without the display of condescension—does homage to the Maker, in honoring the man, and recognizes the individual's own position as on the common level of membership in the great family which has but one Head and one Master.

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[*] Dr. Kane, in the scenes of his Arctic expedition.

In the management of the family and the school, the whole class of virtues on which we are now dwelling, requires particular attention in all communities in which there is a peculiar tendency, owing to the free spirit of their institutions, to place a high nominal value on those traits of character which indicate independence and self-reliance. The unreflective, unreasoning nature of childhood, early catches the spirit of the moral and social atmosphere in which it breathes, and in its natural tendency to exaggeration and excess, carries what might have been a positive excellence to a noxious vice. The absurd and culpable neglect of parental control, so prevalent in our day, often exhibits a spectacle of apparent insanity, in the boys and girls of our families and our schools abandoning the natural and beautiful character of their years, and ridiculously trying to play the part of self-responsible men and women.

15. Example, *as a Moral Influence.*—Imitation—the power by which man is enabled to maintain his personal analogy to surrounding conditions of nature, life, and character, and thus to conform to the laws of being, in their requirements—lays him open, in the early stages of life, more particularly, to the influence of example in the actions of his fellow beings. The character of parents, teachers, companions, is, in this way, unconsciously transcribed in the daily life of childhood and youth, and, to a great extent, even in the habitual actions and expressions of maturer years. The law of sympathy, written on the human constitution, in its effects on the imitative tendency natural to man, is a most fruitful source of good or evil in every moral relation and, emphatically calls for the watchful care of the faithful educator.

16. Prudence, *as a Moral Monitor.*—This virtue—if, in obedience to ancient classification, it may be so called—when it springs from just and honorable motives, is a negative but preventive wisdom, somewhat analogous in its conservative effects, to the modesty which reserves itself in communication with others. It is, indeed, but a preventive virtue, yet one which education properly inculcates as a protection against manifold evil to the individual himself as well as to others. It forbids hasty conclusions, rash resolves, injudicious communication, inconsiderate conduct, hazardous undertakings, foolish expenditures of time, strength, health, or other means of useful or beneficent action. It resembles thus the self-control which keeps man in possession of his powers, and enables him to use them at will. Its

moral value, therefore, though negative, is great, and great, obviously, in proportion to the inexperience and unconsciousness of the mind in its earlier stages of progress.

17. Personal Habits: *their Moral Value.*—(1.) ***The observance of Order and Method*** in the distribution of time and the succession of occupations, seems to be, in the sphere of daily life, what the regularity of alternation in day and night and the return of the seasons, is to the year. They form a security against a thoughless, random t/ mode of life, destitute of steady aim and purpose, made up of loose scraps of time, unconsciously or idly passed in effecting nothing. Man's dignity and destination imperatively forbid such a life. Morality and religion equally condemn it. But from the multitude and variety of objects soliciting its attention, and of desires craving gratification, the young mind, unaided by education, is prone to lose itself in vague and abortive endeavor at the passing moment, instead of relying on that continuous and systematic industry to which nothing practicable is denied. As the bark of life floats down the ceaseless stream of time, the hand of diligence gathers into it, hour by hour, the rich and ever increasing freight of varied acquisition, in anticipation of another and yet happier voyage, in the great Hereafter.

Activity and energy, in any pursuit, are valuable or successful only as far as they have the continuity and sequence of *system.* It is this logical principle which gives unity and invaluable results to studies pursued under even the most limited opportunities of time, and which enables the student to weave the life of a day or of an hour into the continuous web of the week, the month, and the year.

(2.) *Industry.*—The love of work, and the habit of working—the steady pursuit of a practical purpose in practical forms, is man's first step in the efficiency which elevates him above the lower tribes of animal life, as a being endowed not with the mere sagacity—if it may be so called—of instinct, but with the intelligent forecast which foresees, and fore-ordains, and prepares; and which consciously shapes and sustains a definite purpose, and willingly and skillfully toils for its accomplishment. For the attainment of such results he is qualified by his original, native love of activity; and when this primary impelling power is directed by intelligence and benevolence, it gives efficiency and success to all his endeavors, whether in the toil which wins the treasures of knowledge and learning, in that which accumulates those of wealth, or in that which indefatigably works for human good, in the labors of beneficent philanthropy.

A judicious *apportionment of time and occupation*, however is indispensable to successful and continuous industry. By such a method only can the fatal evils of excessive close application be avoided, and the due alternation of intervals of entire rest and of renovating recreation afford opportunity of restoring and maintaining the energies of life and mind. He who does not bring to his work the powers of a whole man, is incompetent even to the task of the moment, and, in the long run, his exertions prove but a succession of failures. The jaded student or teacher, and the harassed man of business, are alike unfitted for the nobler moral purposes of their being. Habits of early-formed obedience to the Creator's laws which regulate the whole nature of man, are the only sure reliance for the possession of permanent vigor of body and mind, or the soundness of moral health in the dispositions and affections of the heart. Nothing short of this personal morality in planning and conducting the business of life, can secure the unity of life in the whole man, as an intelligent, efficient, responsible moral agent.

The hygiene of man's moral being demands the most faithful attention even to the minor details of corporal well-being; and in no respect can education more effectually subserve man's best interests, than by an enlightened and constant attention to these requisites of mental health, through the whole decisive period of childhood and youth, which so effectually determines the character of subsequent life.

The lengthened catalogue of virtues and of duties, which a distinct enumeration of the moral capabilities, of human nature, as the subject of educational culture, required, will not discourage the faithful teacher, in view of the manifold duties devolving on him as the guardian of the young mind; if, as we hope he does, he regards moral culture as the chief part of his work, and values intellectual attainment in his pupils only as it conduces to the higher ends of being and of character. Nor will the extent of detail in our suggestions be objected to by those who feel, from the daily experience of the teacher's life, how close must be the watchful observation of disposition and habit, and how thoroughly practical must be the meliorating methods of influence, in the management of the schoolroom as a scene of moral development.

If the preceding outline of classification serve no higher purpose than that of a convenient list for reference to prompt the memory of the teacher, in his endeavors to do some measure of justice to the numerous sources of moral influence on life and character, the purpose of the writer will have been effectually accomplished.

III. THE UNIVERSITY.

SIGNIFICATION OF THE TERM.

THE word "university" is often used without any clear apprehension of what it really means, or is meant to mean. Probably it is at present most frequently employed, when employed intelligently, as signifying an educational institution of great size, and which affords instruction of an advanced grade in all learning. It has however certainly often been assumed by institutions not in all respects answering even to this loose definition; not of great size except prospectively, and whose universality of learning and teaching is in aspiration only.

I. "*Universitas*," both in the usual Latin and in the technical legal language of ancient Rome, from which last it was probably immediately transferred to institutions of learning, means

1. A company, or corporation, or association, or organization of *persons*, acting permanently together, and therefore corresponding most nearly to our word "*corporation*."

2. Any number of *things*, either actually united in some sense, or legally considered as so united.

II. During the middle ages, *universitas* was employed to denote

1. Any number or class of persons mentioned or addressed collectively; as, "*universitas vestra*," applied by the municipality of Oxford, A.D., 1212, to "all believers in Christ (*omnibus Christi fidelibus*);" and by the Bishop of Ely in 1276, to the same. This is analogous to the use of *unitas* in the Latin name adopted by the Moravians, "*Unitas Fratum*." It was used in a proclamation by one of the kings of France, as a mode of addressing his kingdom. And see Ducange and Carpentier, *in voce*.

2. A public corporation; as a guild of artizans; a chapter of canons; and more particularly a town. An old seal of Nuremberg has "Seal of the university" (*i. e.* incorporated body) "of citizens of Nuremberg, (*Sigillum universitatis civium de Nuremberg*)."* Thus there might be, as the "*Penny Cyclopædia*," observes "a university of tailors." It was also applied to a number of churches under one ecclesiastical superintendent.

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* *Description of silver coins of Nuremberg*, (*Beschreibung der Silber-Münzen der Reichs Stadt Nürnberg*." By von Hagen. 4mo., 1766. Preface.

3. A constituent member, or element, of a General Study (*Studium Generale*).

This third sense is the subject of this discussion; the others, however, being valuable, as furnishing illustrative analogies.

III. What was a *Studium Generale?*

The name first used to designate the earliest European universities was *Schola.* From the thirteenth century, the most common term, for a long time, was *Studium;* and as an especial and honorary term, *Studium Generale.*[*] This is used, for instance, in the bull to Placenza, 1248; in the grant to the school of law at Rome, 1250; in the bull to Perugia, 1307; in the charter of Arezzo, 1356; of Vienna, 1365; in the bull for a theological faculty there, 1386; in the charter to Ferrara, 1391; in the bull to Ingolstadt, 1459; in the charter of Wittenberg, 1502.

On the meaning of *Studium Generale,* Savigny observes, (iii., 412):

"The name has been interpreted to intend the whole collective body of the sciences, but incorrectly; because in the first place, no one of the celebrated schools aimed at all those, but they were at first rather limited to one single faculty, and might be without any one or more faculties, without being any the less a *studium generale;* and because in the second place, the same term was also used by single faculties.[†] The name rather refers to the extent of the scope of operation of these institutions, which were intended for pupils of all countries."

The expressions of intention in the early charters corroborate this view. Thus, the bull for Ingolstadt, 1459, says, "That there may be there a plentiful fountain of learning, from whose abundance all may drink who desire to be imbued with good literature, (*Quod . . . sit ibi scientiarum fons irriguus, de cujus plenitudine hauriant universi litterarum cupientes imbui documentis*)."[‡] Rudolph of Austria, in the charter to Vienna, 1365, says: "In order to do something in token of gratitude to God . . . and for the benefit of the human race."* Ludwig of Bavaria, in his charter to Ingolstadt, says, "we have therefore erected, ordained and established a high, common, honorable and free university and school in our city of Ingolstadt, (*So haben wir . . . ain hohe gemain wirdig und gefreyet Universitet und Schuel in unser Stat Ingolstat fürgenomen, geordnet, und gestift*)." (Mederer, iv., 42). Klüpfel† says of Tübingen, founded 1477, that it "was not only *universitas litterarum*, but also an association (*Genossenschaft*) for the benefit of the common study, (*gemeinsamen Studiums*); a *universitas studii generalis*."

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[*] Savigny, "*History of the Roman Law in the Middle Ages,*" (*Geschichte der Römischen Rechts im Mittelalter,*) iii., 412, &c. Padua, was called *studium scholarium,* by Rolandinus, in 1222. Ib., 277.

[†] Thus in the bull of 1363, for the theological faculty of Padua: "We have ordained that there be a general study in the said faculty of theology, (*Statuimus . . . quod . . . studium generale in eadem theologiae facultate existat*)." And in the bull of 1422, for the same faculty at Montpellier: "We ordain that there be a general study of the faculty of theology, (*Ordinamus quod . . . studium generale theologiae facultatis existat*);" and for Vienna, 1384; "We ordain that in the said theology there be a general study (*Ordinamus quod . . . in eadem theologia sit studium generale*)." The law school at Pisa, was called *studium generale.* Fabroni, "*History of the University of Pisa,* (*Historia academiae Pisanae*)," 3. vols., 4mo. Pisa, 1791, 1792, 1795. Quoted in Savigny, iii. 302.

[‡] Mederer, "*Annals of the University of Ingolstadt,*" (*Annales Ingolstadiensis academiae. Inchoarunt V. Rotmarus et J. Engerdus; continuavit J. N. Mederer.*" 4 vols., 4mo. Ingolstadt, 1783. iv., 42.

Petrus Gregorius Tholosanus says,‡ "The term public or general studies is applied to schools in which study is privileged, either by a public grant of the pope, or of the prince, or by ancient custom, of whose beginning the memory is lost; and where the society and assembling of scholars and teachers is permitted; the name of the thing containing, for that contained. Such an institution may be called a general study or a university, for the same reason; because the studies pursued there are offered to all, and are public, and free of expense to those desiring to learn, and taught by settled teachers; and are privileges granted to all students. Nor are they any less to be called general studies, or universities because not all sciences, but some only, are pursued and taught there. For their generality does not pertain to a university of sciences, but to the public purpose of their instruction. For those who originated and established and privileged these "studies," intended that a lecture should be read upon an appropriate number of arts and sciences; and that if they were read on others, that such others should not enjoy the privileges accruing to those prescribed to be taught, and to the pupils and teachers in them. (*Studia generalia, hodie, seu publica dicuntur, scholae in quibus publice ex privilegio pontificis summi vel principis, vel antiqua consuetudine, cujus initii non extat memoria, studium est privilegiatum, et permissa societas et concursus scholasticorum et docentium; continens pro contento. Potest dici studium generale et universitas ratione eadem, quod studia quae ibi tractantur universis proposita sint et sint publica, et gratis, volentibus discere, proponantur ab institutis preceptoribus, sintque privilegia universis studentibus concessa. Neque ideo minus studia generalia dicentur aut universitates, quod non omnes scientiae ibi, sed certae tantum tractentur et doceantur. Nam generalitas ad universitatem non pertinet*

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* Raumer, "*Contributions to the History and Improvement of the German Universities.*" Edited by Henry Barnard. 8vo. New York: 1859, p. 12.

† "*History and description of the university of Tübingen,*" (*Geschichte und Beschreibung der Universität Tübingen.*) By Dr. K. Klüpfel. 8vo., Tübingen, 1849, p. 5.

‡ "*On the Republic* (*De Republica*,") Lib. xviii., c I., § 87. Quoted in Sir William Hamilton's "*Discussions on Philosophy and Literature.*" 8vo. New York, 1853, p. 475. Hamilton calls him "a great jurist of the sixteenth century, the dean of the juridical faculties in three universities."

scientiarum, sed ad publicam causam docendi: prout enim placuit iis qui instituerunt et erexerunt et privilegiarunt studia, scientiae et artes ibidem legi publice tantum debent, et si aliae legantur, non utuntur privilegiis quibus praescriptae docendae, et earum doctores et auditores utuntur et potiuntur)."

Thus it appears that the great European schools of learning of the thirteenth and subsequent centuries were called *studium generale;* and that this name was given to them because they were for the general or oecumenical body of students; for all comers; for the human race; that their generality was of proffered invitation to whatever they could afford; not of an asserted possession of whatever could be desired. It meant not a place where every thing was studied, but a place to which any one might resort to study whatever was taught there, whether but one study, or several, or all allowable studies, (*omni licita facultate*). It might be in one faculty only, in all, or in any selected number.

IV. What was the relation between a *studium generale* and a *universitas?*

The "general study" was not at first an existing and acting body in any proper sense. It was a term used to describe a place of resort for students. The *universitates* were the efficient bodies. As to the relation between the general study and the universities which existed at, or within it, Savigny says, (iii., 412), "The word "university" did not mean the school as such, but had its strict Roman meaning of a *corporation,* formed for purposes connected with the school. The constituent members of this corporation, who exercised its powers and appeared in its meetings, were not chosen in any uniform manner, but under whatever rule was adopted at each individual school. Thus at Bologna, the term *universitas scholarium* was most commonly used to describe it; and at Paris, *u. magistrorum.** But in no event did any person then think of that signification of the word which was first invented at a very late period, and which made it intend the whole body of the sciences. This was an impossible idea at a time when so many of these schools included, for instance, both a *universitas juristarum* and a *universitas artistarum.*

Tomek† says, "It is also of course understood that the members of the *studium generale* had the right to constitute a special organization (*eine besondere Gemeinde*) with its own peculiar rights. The idea of this organization, the university, must espcially be in early times, be strictly distinguished from that of a general study; for it was not necessary that one general study should also constitute but one university. It might include several such, as well as several faculties."

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* Sometimes here also. *u. magistrorum et scholarium.* When the latter term is used alone of Paris, it is to be explained by the early usage which included *magister* in *scholaris.*

† "*History of the University of Prague* (*Geschichte der Prager Universitat*)." By W. W. Tomek. 8vo. Prague, 1849. p. 6.

And again, pp. 26, 27; "After this time" (*viz.*, the end of the quarrel of the year 1372, between the faculty of law and the other faculties), "the general study at Prague remained divided into two universities, having nothing in common, except their chancellor. . . . The university of law (*Juristenuniversität*) enacted its separate statutes in the year 1373."

The *studium generale* might include universities formed on a principle of nationality. This was the case at Bologna, where there were at an early period, at least, two universities of this kind, the ultramontane and citramontane. The universities might also be termed from their particular department of study, as at Prague. This division afterward prevailed at Bologna, along with the other; and in 1561, were published these "*Statutes of the university of jurists in the gymnasium of Bologna*, (*Statuta . . . universitatis juristarum gymnasii Bononiensis*)."*

There was at Padua, in like manner, both a cisalpine and a transalpine university, both of jurists, and each with its rector; and at the same time a *universitas artistarum*, with a third rector.† At Pisa,‡ "The scholars constituted the university, except that the university in theology consisted exclusively of the teachers in that department." In 1340 there were there, however, a cisalpine and a transalpine university. At Vicenza, there were four separate universities by nations, in 1205.§ So there were at Vercelli, about 1228.‖ At Ferrara, the jurists and "artists" (members of the philosophical faculty or faculty of arts,) were separate universities.¶ At Montpellier, there were two universities; in medicine and law.**

These universities, whether the general study contained one or more, and whether constituted by nations or by the studies pursued, were the bodies which transacted the business. They appointed professors, fixed salaries, determined courses of instruction, enacted statutes, treated with all individuals and bodies, and gave the degrees, which the chancellor—who in this formed a center or head to all the universities of each general study—approved, as the Pope's representative.

V. How did the term *universitas* supplant (as it did) that of *studium generale?*

The answer is, by the ordinary course of modification of terms;

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* Savigny, iii., 160.
† Ib., 278.
‡ Ib., 305.
§ Ib., 307-8.
‖ Ib., 310.
¶ Ib., 317.
** Ib., 383.

according to which they lose more or less of the close applicability for which they were at first chosen, and are employed with whatever degree of incorrectness becomes convenient, to designate something in some way descended from or representing or related to the original thing, but not necessarily the same, or the like, in any strict sense.

Thus, as soon as the *studia generalia*, instead of immemorial usage, began to act under, or originated from, some express charter or grant, the meaning of the term *studium generale*, began to tend to become identical with that of *universitas*. At the end of the fifteenth century, this was substantially the case. The charter of foundation of the university of Wittenberg, in 1502, defines the new institution as "a general study or university, or gymnasium, (*studium generale sive universitatem aut gymnasium*)." So, Duke Ludwig of Bavaria, thirty years before, in his charter to Ingolstadt, calls it a "university and school, (*Universitet und Schuel*)."

Before this period, the word *universitas*, when used of a corporation at a *studium* was joined with additional words showing *what* university was meant; and this of course, just as much as at present we should add the words to "society" or "corporation," to signify what sort of one was meant. Thus we have, of Vicenza, 1205, *u. scholarum;* of Paris, at sundry dates, 1209 to 1406, *u. doctorum et scholarium, doctorum et discipulorum, magistrorum et scholarium, scholarium;* of Toulouse, 1223, *scholarium;* of Bologna, 1235, same; of Oxford, 1250, same; and 1300, *magistrorum, doctorum et scholarium;* of Cambridge, 1268, *scholarium;* 1276, *regentium et scholarium;* 1486, *studentium;* of Reggio, 1276, *scholarium;* of Montpellier, 1289, same; Lisbon, 1290, same; Perugia, 1307, same; Prague, Paris, Vienna, Turin, Louvain, 1347 to 1425, *studii.*

But now, *universitas* had acquired a technical meaning, from its long use, in speaking of these most prominent and influential of all the different sorts of mediæval *universitates;* and from about A. D., 1500, the various terms *studium, studium generale, universitas, u. studii, u. studii generalis, academia, gymnasium, archigymnasium, Universität,* and *hohe Schule,* began to be used quite indiscriminately, to designate what answered to the earlier *studium generale* with its included *universitates*, but what had by that time become substantially what the present European universities are.

Here the present historical discussion ends; for it is not now proposed to speak of the essence or powers of a university as now understood.

During the period of about six hundred and fifty years since A. D. 1200, all of which, except the last century, has been one of fancifulness in all manner of interpretation, various erroneous accounts have been given of the meaning of *universitas.*

It was derived, for instance, from the universality of the beneficent intentions of founders or teachers. That this was wrong, has been sufficiently shown in treating of the history of the word. That character, it is true, was the basis of the earlier term *studium generale;* but not of the legal term *universitas.*

It was derived, again, from the assumed universal scope of their field of instruction. This interpretation is, however, conclusively answered, not only by the same arguments as in the former case, but by the absurdity which its admission would imply, on the one hand, in the usual expressions of *u. doctorum* or *scholarium*, which necessarily refer its *universityness* to its human constituents, and on the other hand, and still more forcibly, in the equally common ones of *u. juristarum*, or *artistarum*, or *theologiae*, which phrases make nonsense, if we permit one of the words to apply the university to all things and the other to limit it to one, as much as to say "an institution for studying every thing, where they study nothing but law."

Again; both *studium generale* and *universitas*, were sometimes derived from the generality or universality of the currency of the degrees which they gave. Though not absurd, no reason appears in the text of early charters or authors, to support such a derivation, and it seems mere conjecture. The constant early use of accompanying words to define the constituents of *universitas*, seems positively to exclude the idea of its having had any other meaning than that of a collective body, organization, or corporation.

The true idea of the university as it has existed, will be developed in the history of a few of the more prominent institutions. The accounts of their historical development, various modes of action, and connection with the State and with educational systems, will afford materials for determining this question.

On the following page is given a list of some authorities on the earlier Italian and French universities.

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IV. UNIVERSITY OF TÜBINGEN.*

I. FOUNDATION TO THE REFORMATION, 1477—1535.

THE universities of the middle ages were centers of influence not only upon learned studies, but upon all departments of intellectual activity. They had a decisive influence upon the formation of views in philosophy, theology, law and politics. Before the discovery of printing, and indeed for a short time after it, they were the ordinary means of intellectual intercourse, filling the place of the press, both in learned and in light current literature. They were also the organs of public opinion. But the education furnished by the universities was still by no means an education for the masses of the people. It was thoroughly aristocratic, and its recipients formed close corporations, which took rank by the side of the corporations of the clergy and nobility, as a privileged class; the degree of doctor, for instance, conferring the privileges of nobility. And like those other classes, the universities were at first by no means arbitrary creatures of political authority, but natural results of the mental activity of the period. They arose in consequence of the appearance of some beloved and influential teacher, around whom gathered a circle of scholars, which in turn attracted to itself other teachers and other scholars. Thus originated the universities of Paris, Bologna and Salerno. But all this was no longer the precise significance of a university, at the time when the German ones were founded. These latter were no more the natural outgrowth of the intellectual life of a nation, but arose only after the period of the bloom of the national intellectual life. Their essence is to a far less degree the mental life of their time; it is no longer the emperor of Germany who as such establishes the university, but the hereditary lord of a country, who directs the current of learning and education through separate canals in his own dominions. The first university which was founded in the German empire, that of Prague, is an instance of this. It was founded in 1348, by the emperor Charles IV., in his favorite city, after he had given up all hopes of gaining the German empire, and had withdrawn to his hereditary dominions, to establish his authority there on the basis which he preferred. After this example, several other universities were founded in German provinces, but all under the auspices of the immediate sovereign. Such were Vienna in 1365; Heidelberg in 1386, and Leipzig in 1408. The fifteenth in order of foundation is Tübingen, which was founded in 1477 by Count Eberhard of Wirtemberg, who was led to follow the example of other German princes, by his own opinion of the value of learned education, and by the influence of his accomplished mother Matilda, an archduchess of Austria, and of some of his council, especially Vergenhans, surnamed Nauclers, and Reuchlin. The decree of foundation, dated 3d July, 1477, thus speaks of his intention:—

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* Compiled from "*Klüpfel's History*," for the American Journal of Education.

> He has often considered how he might best set about some enterprise well pleasing to the Creator, and useful for the common good and for his subjects. He has arrived at the conclusion that he can begin nothing better or more pleasing to the eternal God than to prepare means for the instruction of good and zealous youths in the liberal arts and in learning, so that they may be enabled to recognize, fear, and obey God. This is better than to build magnificent churches and to found wealthy ecclesiastical institutions; for the best temple of God is the human heart, and the Creator takes more pleasure in the goodness and holiness of men than in splendid temples, which contribute but little to happiness; while the great object of moral training and elevation can in no way be better attained, than by means of instruction in learning. In this good belief he has determined to found a school for human and divine learning.

Count Eberhard also uses some remarkably noble expressions in the charter, dated 9th October, 1477. He says here, "In the good design of aiding to discover the well-spring of life, so that helpful and healthful learning, flowing thence in streams immeasurable to all the ends of the world, may work for the quenching of the destructive fires of human unreasonableness and folly, we have determined and undertaken to organize and establish a university in our city of Tübingen." As reasons for selecting Tübingen, he mentions the agreeableness and fruitfulness of the neighborhood, and the healthfulness of the air, as facts patent to all. One main reason also probably was that Tübingen was the principal city in his dominions.

As universities were properly ecclesiastical institutions, their legal establishment had to be confirmed by the pope. This had already been done, in the application of Count Eberhard, by Sixtus IV., by a bull of November 14th, 1476, promulgated at Urach on the 11th of March, 1477, before many of the lay and clerical notabilities of the country, by Heinrich Faber, abbot of Blaubeuren, as apostolical commissary. Here was read the papal act of foundation, which ordered the establishment of the university (*allgemeines Studium*) for every faculty and every allowed branch of learning, the erection of chairs of instruction in every faculty, and the compilation of a constitution and statutes for the university. The chief object of the institution was set forth as the propagation of the orthodox faith; since by learned studies the soul's health is promoted, controversies are healed, peace and quiet induced, things permissible and forbidden distinguished, rewards apportioned to the good and punishment to the bad, and thus eternal and temporal advantages secured to the world. A very important point of the papal bull was the pecuniary endowment of the new institution. The revenues of the benefices of Brackenheim, Stetten on the Heuchelberg, Asch, Ringingen and Ehningen, were granted to the University, which was on its part bound to have their ecclesiastical duties performed by competent vicars. The most important endowment, however, was that of the prebends of the St. Martin's foundation in Sindelfingen, which were for this purpose transferred to the St. George's church in Tübingen. The eight canonries of this foundation were to furnish the incomes of the theological and juridical faculties, and the professors were to be canons. The deanship was to be held by the chancellor.

The imperial confirmation came some years later, on the 10th of February 1484, and gave the university permission to teach and expound all the imperial laws, and to confer degrees in the science of the same. The University was opened in September and October 1477. On the 14th of September enrolled themselves in the matriculation book several noblemen of the count's court, the abbot of Blaubeuren, Johann Degen, dean and first chancellor of the university, Lucas Spechzart, the count's private physician, and some of the count's council. The lectures were opened on the 1st of October, and on the 9th was held the first session of the senate, on which occasion Count Eberhard's charter was read, and the statutes presented, compiled by Abbot Heinrich of Blaubeuren.

Constitution of the University.

This charter recognized the University as a privileged corporation, and laid down the outlines of its constitution. Count Eberhard, in it, took all the doctors, masters and students under his special care and protection, and commanded all his officers and subjects not to injure in body, goods or honor, any one connected with the university, under a penalty of 100 florins. If any one so connected has a lawsuit with a citizen, the courts are bound under penalty of 100 florins and loss of office, to do justice without favor. Under the same penalty it is forbidden to all authorities to seize any of the instructors or students, or to lay violent hands on them. Only the rector can order such measures, and in him alone, with the concurrence of the senate, renders the power to decide upon university matters and police. He may, however, call on the authorities if unable to enforce his authority. All persons connected with the university, and their goods, are freed from all duties, tolls, exactions and taxes; a privilege which duke Friedrich afterward confined to necessaries of life for domestic use. All these privileges are granted not only to the professors and students, but to their wives, children and servants, and for the beadles, scribes, book-binders, printers and illuminators, resident at Tübingen. Without the rector's permission, no one might take student's books in pawn under penalty of 40 florins. And no Jews or other usurers might live in the city.

Without the license of the Medical Faculty, no one might practice medicine or surgery in the city and neighborhood. These privileges, granted by the count as the lord of the land, were recognized by the city by a special agreement, and sworn to in the hands of the rector by the bailiff and two of the council. The city clerk was bound to read them over in the cathedral every year on St. George's day, before all the people. On this occasion any grievances or wishes of the city or the university were stated, and a banquet concluded the ceremony.

Next to the charter, the chief authorities for the original constitution of the university are the first statutes of 1477, and the ordinances of the various faculties, drawn up from 1480 to 1495. In these we find many points of similarity to the university of Paris, which was the model for most of the German universities. Like that, the university of Tübingen was *universitas*, not only *litterarum*, but also in the sense of being an organization for the benefit of the general study; *universitas studii generalis*. It was to be one body, whose members were the separate faculties, themselves again constituting close corporations. There was here no occasion for such a division into "nations" as prevailed at Paris, most of the students coming from the immediate neighborhood. As in Paris, the government was exclusively in the hands of the teachers. The professors, or masters and doctors privileged and bound to lecture, were called *doctores regentes*, an expression derived from *regere*=*legere*, but applied to their share in the government. The rector, as head of the whole corporation, was chosen by this body from among themselves, annually, on St. Philip's and St. Jacob's day. The rector called together the senate for consultation upon all university matters, himself presiding; had charge of the finances, in connection with four deputies, and exercised jurisdiction, in criminal affairs with the concurrence of the whole senate, and in civil affairs with five members of it, usually from the juridical faculty. The chancellor acted as his substitute in the government and in the papal court, but was subordinate to him in rank. He had charge also of the ordinary conduct of the university, and with some members of the senate constituted a tribunal of appeal from the judgments of the senate. As the mandatory of the pope, the chancellor must be an ecclesiastic, and was usually dean of St.

George's, receiving his salary as such. The officers and servants of the senate were, the Syndic, the Notary, afterward termed Secretary, and the Beadle. The syndic kept the accounts and the cash, and ranked with the professors. The notary drew up papers for the senate and the academical courts, framed and expedited resolutions and decrees, made reports, and kept the records. He must have studied law, and been admitted a notary of the imperial chamber of justice. The beadle's duty was to go upon errands for the senate or its members, to have charge of the watch and police departments, to collect fines, and to inflict other penalties. His pay was one-third of all fines collected, and 20 florins of fixed salary.

Within the university corporation were the four faculties, each having a constitution similar to the general one, and the right of drawing up their own statutes. The principal or speaker of each faculty was the dean, who was chosen annually by the other members. The faculties stood in a certain gradation of rank, the theological being the highest. This consisted of three doctors of the Sacred Scriptures, who were also canons of St. George's foundation, whose prebends furnished their salaries, which were at first about 100 florins. The second place was held by the faculty of law, which was also graded within itself, the higher section consisting of the Doctors of Decretal Law, (*doctores decretorum*,) who taught the canon law, were usually theologians, and also, in virtue of their clerical dignity, canons. The senior professor received 120 florins, the two others, each from 80 to 90 florins. The lower section consisted of the doctors of laws (*doctores legum*,) who taught the civil law. The senior professor received 100 florins, the second 80 florins, and the third, who lectured on the Institutions, from 30 to 40 florins. The medical faculty, which ranked third, consisted of only two instructors; of whom one was paid 100 florins, and the other 60 florins. These three faculties were termed the "superior faculties," in distinction from the philosophical faculty, or faculty of arts, as it was at first called, whose position was quite inferior to theirs, and in a certain sense under their oversight and guardianship. Not all its members were admitted into the senate, but only the dean and two others; and even these were in many cases excluded from acting, and they could not be chosen deputies. The ordinary professors in their faculty were four, two of the old way, or realists, and two of the new way, or nominalists. There was a fifth professor, who was to lecture on oratory and poetry. The four former received 25 florins salary, and the last 20 florins. The ordinary professors in arts had also free lodging in some of the colleges, and might not marry. These five constituted the faculty proper, but all those who had taken an academical degree in philosophy might rank as members of it, and might lecture. The statutes of 1488 provide for the four collegiate doctors, ten *conventores* (masters who lectured,) two pedagogues, and two *resumptores magistrandorum* (probably a kind of repetents or tutors.) This subordinate position of the faculty of arts is quite peculiar to Tübingen, and is found in no other university.

The senate elected the professors, the chancellor representing the state; and the ruler of the country must confer the appointment when the choice was made. In these elections, as elsewhere, the philosophical faculty was inferior to the others. In 1491, the rules for electing were, that there must be present at choosing a professor of theology, besides the rector and chancellor, two doctors of the sacred scriptures, if there were so many, one decretist, one legist, one doctor in medicine, and two in arts; in electing a professor of law, or medicine, all the professors of the higher faculties must be summoned; and in electing a professor in arts, besides the professors in that faculty itself, these must assist the theological professors, two of law, and two of medicine.

The ordinary professors were bound to give one ordinary lecture daily. Ordinary lectures were those delivered in the forenoon, upon the prescribed subjects of study or text-books. Extraordinary lectures were those delivered in the afternoon, upon subjects considered only of collateral importance. Any professor omitting a lecture had to pay a fine of a half florin for every hundred florins of yearly salary, or at that rate. Sickness, university business, &c., excused from the fine. If a lecture was omitted by permission of the rector, either it might be delivered at some unoccupied hour, or the fine be paid.

Besides the salary, no fee, at least for the public lectures, was paid the professors. The decree of foundation expressly says that the instructors must have fixed salaries, that they may lecture gratis, and that poverty may be no hindrance to a knowledge of the truth. In the oldest statutes of the faculty of arts, a *pastus* or lecture-fee is mentioned. Until the middle of the eighteenth century, however, the honorarium was an exception, and very small. The vacations, which are not mentioned in the earliest statutes, &c., were in 1518 fixed as follows: at Christmas, from St. Thomas' day to the Epiphany; eight days from Quinquagesima Sunday; from Maundy Thursday to the end of Easter-week; eight days at Whitsuntide; and an autumn vacation from St. Michael's day to St. Luke's day, usually some two and a half weeks; in all, about eight and a half weeks.

An important feature of the older universities on the plan of that of Paris was the "colleges," or boarding establishments, where the scholars lodged, with their instructors, and boarded. Of these there were only two at Tübingen, called the *Bursen*, or *Contubernium*, and which both occupied a single building. They were designed for scholars in arts, and one was occupied by nominalists and the other by realists. They were called the Eagle and the Peacock (*aquile* and *pavile.*) A professor in arts was usually at their head, and was entitled *rector contubernii*. A steward had charge of the boarding arrangements. A moderate rate was charged for board and lodging, and that it might be lower, a hundred measures of barley were furnished annually, gratis, by the university and the state.

The income of the university, from the eight canonries and five benefices already mentioned, from a title given by a papal bull in 1480, was not more than 1000 florins a year, which was all expended in salaries, except the small donation to the *Bursen*, none being laid out on scientific objects or collections.

Literary Condition.

The university was founded at a period not unfavorable to literary labors. The revival of classical learning had already directed attention to elegant studies, which were already eagerly pursued by circles of students in various parts of Germany. But this spirit did not at once penetrate the universities. At Heidelberg, close by, Agricola had been unable to maintain himself; and Johann Wessel, the theological forerunner of Luther, had been obliged to leave it. At all the universities the old scholastics, founded partly on the dogmas of Christianity and partly on the misapprehended doctrines of Aristotle, possessed their ancient dominion, although they had long lost any creative vigor, and consisted only of monotonous repetitions, and a sophistical play of logical forms. The actual amount of knowledge which was communicated at the universities was both strictly limited in extent, and remarkably dry, In natural science, history and antiquities, it consisted in a disconnected miscellany of detached scraps of knowledge. Even in jurisprudence, which had just received a new element by the resumption of the study of the Roman law, there was no really vigorous investigation. Under such circumstances it was not to be expected that the literary aspect of things, at the opening of the new university, would be remarkably flourishing. It was also at first found difficult to secure distinguished instructors. The most eminent of the theologians was Gabriel Biel, the last of the scholastics, who had much influence upon the organization and administration of the university. Besides him we find one Conrad Summenhard, of whom it was reported that he studied the Scripture with too free a spirit; one Martin Plantsch, who seems to have distinguished himself as a pulpit orator; Wendelin Steinbach and Jacob Lempp, pupils of Biel, and confirmed scholastics. Among the jurists, the most eminent was Johann Vergenhans, surnamed Nauclerus, though he is better known for character, varied attainments, and the high opinion entertained of him by Count Eberhard, than for any particular juridical labors. He is also known for his Chronicle, which began after the manner of the period, with the foundation of the world, and is an important authority for the fifteenth century. Most of the names of the rest of this faculty are quite unknown; as Marenchus, Vesselen, Ochsenbach, Truchsess, Widmann, Hartsesser. One of them, Vitus Fürst, afterwards became *Podesta* (*Statthalter*) of Modena. Among the medical faculty was one eminent man, Johann Widmann, also known by the names of Möchinger and Salicetus. In the faculty of arts, Paul Scriptoris had a reputation as a man of intellect, an expounder of Duns Scotus, and a mathematician. In the same faculty was Johann Reuchlin, who however only remained a year; although his influence even during that short time may have aided in causing the invitation of Heinrich Bebel of Justingen, sixteen years afterwards to the professorship of polite letters. Bebel labored at Tübingen for about twenty years, and was one of the most eminent humanists of the day, and an ornament to the university. His zeal for the study of an elegant latinity bore good fruit in the labors of his pupils, Michael Coccinus, Johann Heinrichmann, and Johann Brassicanus. Other eminent teachers in the university during this period were Georg Simmler, who was Melanchthon's teacher in Greek at Pforzheim; Hildebrand, another of Melanchthon's teachers at Pforzheim, a continuer of Nauclerus' Chronicle, and a zealous and successful student of Greek and Hebrew literature; Melanchthon himself, who was professor from 1514 to 1518, when he went to Wittenberg; the aged Reuchlin, who was appointed a professor of Greek in 1522, but who died before beginning his lectures; the mathematician Johannes Stoffler, celebrated for mechanical skill, and who was reputed a magician. He published in 1499 an astronomical ephemerides which excited great terror by predicting a remarkable conjunction which was to be followed by a universal flood. As the year approached writers came out for and against it, and when the fated month of February 1524 passed over with dry and fair weather, the tottering reputation of astrology received a new blow. But he was a good mathematician and successful teacher, brought many students to the university, and was also much liked as a man of wit and social talent.

The first statutes of the faculties give but little information regarding the studies; but it is evident that the formal studies and disputations, constituted an important part of them. To become bachelor of arts it was necessary to attend the formal lectures on logic, dialectics and Aristotle, for a year and a half, to go through the usual exercises, reviews, and repetitions, to attend thirty of the ordinary bachelors' disputations, and thirty of those of the masters, and to have been respondent in at least four disputations. After this the candidate stood a public and private examination, the dean of faculty first giving him, by the beadle, two candles; and expounded and defended a thesis given him. He then received his baccalaureate, and a banquet followed, toward which the candidate paid something. A similar series of exercises preceded the promotion to the master's degree, as a sign of which a round violet-colored *birett* or cap was given. The examinations for degrees in theology and law were of the same character.

King Ferdinand gave the university a new order of studies, apparently the first one, in 1525. In this, instead of the wearisome paraphrases and translations of Aristotle, were prescribed the newer and more reasonable treatises of Faber Stapulensis on dialectics and logic; and of the commentaries, Averroes and Avicenna of the Arabic ones, Themistius, Simplicius and Theophrastus of the Greek, and Albertus Magnus, Thomas and Scotus of the Latin. Those of the monk Johannes de Gandano were prohibited, as were all of those sectarian and innovating writers who fancy that there are several roads to truth instead of one. The *conventores* (a sort of tutors who lodged with the scholars,) were to use in the contubernium the epitomes and smaller Logic of Faber, the text of Petrus Hispanus, or Rudolph Agricola. In theology, the course for which was fixed at five years, the work of the professors was thus distributed. The first was to lecture on the Pentateuch, Paul's epistles, and one book of Sentences of Petrus Lombardus; the second, or the Gospels of Matthew and John, Psalms, Job, aud one book of Sentences; the third on Isaiah, Jeremiah, Daniel, Mark, Luke, Acts, the canonical Epistles, and one book of Sentences; and the fourth on one book of Sentences, the minor prophets, and Hebrews.

The lectures for the five years' course in jurisprudence are similarly prescribed. The medical students, whose course was of four years, studied Avicenna, Almansor, Galen, and Hippocrates. A course of anatomy was to be given at least as often as once in five years!

This course of studies was narrow, but not more so than in the other German universities.

Manners and Morals.

There being but one *Burse* at Tübingen, that institution did not so much facilitate the oversight of the students as in some other universities, most of them being left to their own selection of lodgings.

The disciplinary ordinances of the first statutes are in substance as follows:—The students are to be respectable in deportment and clothing, respectful to the doctors and masters, peaceable among themselves, and shall not insult any one. Strolling about the street at night is especially forbidden, as well as unfair gaming, going to public dances without an invitation, and nocturnal debauchery in houses of ill-fame. If a student uses insulting language to another, he is to pay to the university a fine of two pounds of wax (about 15 kreutzers;) if he seizes a stone or weapon without actually using it against any one, three pounds; if he inflicts a slight injury with them, two florins, besides the confiscation of the weapon. Severe injuries were to be punished by the rector and senate according to the nature of the case. For clothes, the ecclesiastical or scholastic cut is prescribed, and garments cut short, or otherwise indicating frivolousness are especially forbidden. Mantles must open only at the breast or the side, and must cover the whole body. Weapons may be carried, but not unusual ones. No spurs must be worn more than a finger long. Red or round biretts or caps are forbidden, with a view to preserve the distinctions of the clerical and other dignitaries. Warnings against the company of disreputable women are repeatedly given. For introducing any such person into the Burse, the first time, a fine must be paid of a quarter of a florin; the second time of a half florin, the third time of a whole one; and for a fourth offence the penalty is exclusion from the Burse. It is observable that these statutes name no penalty of imprisonment.

A rescript of Eberhard II., to the university and to the bailiff of the city, of the 6th February, 1498, gives but a poor impression of the morals of the students. The duke says that it is reported that the students of Tübingen squander much money and study little, and he therefore requests these authorities to be assiduous in causing them to be studious, and to avoid insolence, expensive dissipations and disorderly behavior. The bailiff is ordered to assist the rector and senate in upholding discipline; and to proclaim to the tradesmen, mechanics, and inn-keepers, that they must not trust the students, except merely for the necessaries of life, on pain of being deprived of the usual means of enforcing payment.

In 1523, King Ferdinand administered a very severe reprimand to the senate for permitting such disorder, at which that body, in a great fright lest their privileges should be taken from them, sent a deputation to beg for a remission of the meditated deprivations, in which they succeeded, and seem for a time to have enforced better order.

There was, however, no want at any time of regulations for maintaining discipline, which are given at great length in the ordinances of 1518. Every student was at his first coming to report himself to the dean of his faculty, to state his lodgings and the lectures which he was to attend. The dean was to examine twice a year into the industry and morals of the students of his faculty, to call up and admonish the delinquent, and to report the incorrigible to the senate for dismissal. Every student not in the Burse, was to select a master or preceptor, who was to be responsible for his conduct. The professors often performed this duty.

Religious observances were prominently enforced. All the students were expected to attend all the sermons and litanies. Any one found about the city or the country during the service was to be reported to the rector for punishment. Blasphemy, cursing, and similar offenses, were punished with imprisonment in the *carcer*, or university prison. Any one guilty of injurious words or actions to an officer or watchman of the university was to be imprisoned fourteen days, or fined two florins, or more, if the rector should so decide. Imprisonment was inflicted for all nocturnal disturbances, which term included music, which was never allowed. Any one abroad after the evening bell without a lantern, was imprisoned fourteen days. Frequenting taverns is also strictly forbidden; being allowed only in company with the preceptor, or in searching for a friend. Drinking-bouts are forbidden under a penalty of twenty florins, and if attended with disorder the rector may also imprison.

Nocturnal tumults, attacking or insulting the watchmen or citizens, concealing delinquents, were frequent causes of complaint and investigation, but were seldom adequately punished. For instance, some students of noble birth had in 1533, been drinking all day at a tavern, and tried to stab the host. At night they went into the marketplace, and rioted and made outcries until two o'clock. Finding that there was a dance in the house of a neighboring shopkeeper, they demanded admission, and on refusal threatened to break in. The woman of the house called out the neighbors, who came with lances and halberts and drove the students off. The testimony at the investigation of this affair shows that such disturbances were not uncommon, and that there were frightful alarms, and assaults on the watch, almost every night. But it does not appear that the senate ever inflicted any exemplary punishment for such doings. On the rioters just mentioned, for instance, no sentence of penalty seems to have been passed. And all the provisions for maintaining public order seems to have been very incomplete, and the respect paid to the academical authorities, very small, as the following instance shows.

One Beg, of Reutlingen, had wounded a farmer of the vicinity and the rector summoned him, by the beadle, to appear before him at noon. The student replied to the officer "I will come if I have time," but did not come. The rector then sent to the city bailiff, Johannes Breuning, requesting that four of the town constables might be sent to carry the recusant Beg to prison, and to watch the city gates, so that he might not get away. The bailiff replied that he could not accommodate the rector, having but one constable; the two others being sick; and besides, that nobody wanted to intermeddle with the affair, at all. The senate was now assembled and sent its notary and beadle together to Beg, to either put him into the prison, or bring him before the senate. He came, at last, and on appearing was condemned to imprisonment, and shut up. A few days afterward, a deputation of noble students appeared before the the senate to demand his release. One of the most prominent of the students, Vitus Lang von Planeck, who had before been threatened with dismission for keeping a mistress and attending no lectures, and who had been one of the worst actors in the late riot in the market-place, acted as speaker, and had a hearing. The senate finally concluded to release Beg on condition that he should promise not to take any revenge, for the inconvenience of imprisonment!

Bloody contests with the townsmen often took place, especially on wedding occasions, when the students often attended uninvited, and behaved insultingly. On one such occasion, at the wedding of a vine-dresser a body of students coming in that manner, the same Vitus von Planeck at their head, was received by some young vine-dressers with clubs, and there was a pitched battle in front of the Hospital church, the vine-dressers, however, getting the worst of it. They complained to the authorities, investigations were made, and the delinquent students, punished, as the protocol states, "as justice required." What the penalty was, does not appear. Going to dances in this way was often prohibited, but apparently without much result. The students also often got up dances. But this required the permission of the senate, which was frequently refused, to the great disappointment of the young gentlemen.

Dice was a prohibited amusement, the penalties being, for the first offense an admonition, for the second half a florin fine, for the third dismissal. But no instance is found of the latter. Lampoons were forbidden, and were to be punished at the discretion of the rector. And indeed, nothing whatever might be printed in any language or on any subject, without the approbation of a censorate consisting of the rector and the four deans of faculty.

II. REFORMATION TO RE-ESTABLISHMENT AFTER THE PEACE OF WESTPHALIA, 1535—1652.

Changes at the Reformation.

Duke Ulrich of Wirtemberg, at regaining possession of his dominions, proceeded to introduce the principles of the reformation into them, and of course into the university. Here, however, he found a bitter and obstinate opposition from some of the scholastics; although on the whole pecuniary considerations seem to have prevailed so far that the university vailed its intention of yielding to the Duke, under the decent show of a request for a public discussion, according to the custom of the day, on the new principles; designating Melanchthon, then in high reputation, as the opponent most acceptable to them. But the duke, who had some reasons for disliking him, only applied to him after unsuccessful negotiations with Osiander, and Grynäus, and Blarer. But Melanchthon refused to undertake so onerous and contentious a task, for the duke wished him to reorganize the university and set it in motion upon the new principles. The work was therefore necessarily done by others; and the institution only passed into the control of Protestant instructors after a disastrous period of some ten years of dismissions, recusancy, and quarrels, both between Catholics and Protestants, and Lutherans and Zwinglians. The attendance, while second-rate men, mainly interested in fighting about doctrines and appointments, filled the chairs of instruction, also nationally decreased very much.

Blarer and Grynäus, the former a commissary for introducing the reformation into Wirtemberg, and the latter a theologian of Basle, were the authors of the scheme upon which the university was rearranged. This scheme was substantially intended to bring the course of study into harmony with the recent progress in liberal learning, by substituting classical studies for the ancient scholasticism, and the new for the old theology. It charged the former course with neglect of the languages, Greek and Hebrew especially, obscurity, as to the liberal arts, and teaching a philosophy not pure and clear, but unintelligible to the young. Thus the students received little benefit, and many only acquired a disgust for their studies.

The reformed scheme contemplated, as a means of improving studies in philosophy, a consolidation of the two *Bursen*, and the discontinuance of the two "ways," in which these studies had before been pursued. But it was found necessary to concede to the philosophical faculty, that Aristotle might be studied from the Latin, with the Greek for comparison's sake, the Greek alone, instead of being the only text, as at first proposed by the reformers, being only to be studied when some number of uncommonly capable students should be forthcoming, and under special teachers with special salaries.

For better preparation in the languages, two preparatory schools, were adjoined to the university proper; a "Trivial School," for the rudiments, and a "Pædagogium" immediately preceding entrance to the university. An eminently fit person was to be made "Pædagogarch," with three masters to assist him; and they were principally to teach grammar and rhetoric; to read with their pupils, Terence, Virgil, and Cicero's epistles; to make them compose a poem (*carmen*), and an epistle (*epistolam*); to instruct them in music, both simple and figured, and to sing with them, sometimes after meals, a motet or a psalm.*

The university proper, formed the third of this series of institutions, and its first course was to be that of the faculty of arts (philosophical faculty). This included three sorts of lectures; 1. *Lectiones communes*, for both bachelors and masters, on Cicero *De Officiis*, and on mathematics; 2. Special lectures, *a*, for those studying for the degree of bachelor, on dialectics (after Melanchthon), rhetoric, the Old and New Testaments in Latin, with the original texts compared, Greek grammar, and Lucian; *b*, for those studying for a master's degree; Aristotle's dialectics, with the Greek text compared, physics, and Old and New Testaments, with the originals compared. 3. Free or optional lectures, not obligatory; on Hebrew, poetry, and oratory. The usual weekly disputations in the faculty of arts were continued, but for those in the Burse were substituted (Latin) poems and letters composed by the students, and exercises in declamation.

In the faculty of law, were substituted for two of the three canonists, two professors who were to read on the customs of feudal law (*usus feudorum*), *novissima jura* (the novels?) and Greek constitutions. The remainder of that faculty, and the medical faculty, remained unchanged. Except the introduction of the comments on the Bible with the comparison of the originals, in the faculty of arts, no changes were made in the course of theology. The number of ordinary instructors was fixed at 23; 2 theologians, 6 jurists, 2 medical, 7 in arts, 1 Hebraist, 1 poet or orator, and 4 in the Pædagogium.

This plan, a year after its preparation, was reviewed after consultation with Melanchthon but not essentially changed.

Finances at the time of the Reformation.

The increase in the number of professors, and the appointment of new ones with larger salaries, made an increase in the income of the university urgently necessary, but no aid could be obtained from Duke Ulrich, except tithes to the value of about 434 florins a year, made up to 600 florins from the public treasury; an addition quite insufficient.

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* This Pædagogium lasted until the Thirty Years' War, when it fell into ruin, and was succeeded, in 1655, by the higher gymnasium of Stuttgard.

The gross income of the university was about 5,378 florins, from which deducting expenses of management and incumbrances on some of the estates, amounting to 2,197 florins, the balance for the expenses of the university is only 3,181 florins, of which, (in 1540–41), 2,493 florins were paid in salaries to the twenty-three teachers.[*] These salaries were mostly very small, a very few of the highest, reaching 200 florins, the rest being of 160, 140, 120, 80, and 40 florins.[†] Those of the faculty of arts, except a few, had at most 80 florins, but with lodgings rent free, though they were required to live unmarried. The professors might also buy wine and fruit at low rates from the university stores. They might not receive any lecture fee, except for private instruction. Perquisites accrued to the jurists, for giving opinions on cases in the courts, and to the medical professors from their annual visitations to the apothecaries' shops and lepers;[‡] and in the faculty of arts, from promotion fees.

Salaries of instructors were the only regular expenditures of the university for educational purposes; as there were no special scientific collections or organizations. Consultations were frequent about replacing the library, burnt in 1534, and the duke promised books from the discontinued monasteries; but no money seems to have been spent for the library either by the university or the government, for a long time.

The amounts paid to the financial officers were trifling; but their traveling expenses, dinners and drinking-bouts, (*Untertrünke*), cost quite a sum. After the frequent journeys to collect tithes, for instance, it was usual to have an *Untertrünk*. Dinners were often made, also, on occasion of important transactions, especially at balancing accounts, at which the whole senate was frequently present; and the same at the half-yearly reading of the statutes, the election of rector, &c., all at the expense of the university. Although the whole senate could be feasted for a few florins, the entire amount thus spent was quite large.

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[*] The income of Wittenberg, was, in 1532, 4,711 thalers.

[†] At about this time, Luther had at Wittenberg, 300 florins. At Heidelberg, in 1558, after being materially increased, the salaries of the theological professors were from 160 to 250 florins, and of the others, 120 to 150 florins. Twenty years before, the celebrated Hermann von Buscheck, but 80 florins; Grynäus, 60 florins; Seb. Munster, 25 florins; Micyllus, 60 florins.

[‡] These annual visitations were an official duty of the medical professors.

Expenses by way of honorary gifts, and to sustain the reputation of the university, were also frequent. If a foreigner of learning or a graduate who had attained civil or ecclesiastical eminence, came to Tübingen, he received some measures of malmsey or other good old wine from the university cellar, or an honorary present in money;* or was invited to a banquet in the university, with the senate.† If a professor's son or daughter was married, a wedding present of from 2 to 4 ducats was made; if a member of the university published a book and presented a copy to the senate, he received 8 or 10 thalers, or if special honor was intended, a silver pitcher. Thus, while close economy was practiced in salaries and educational expenditures, quite the opposite was the case when the object was to represent the the corporation, or to pass a day of genial social festivity (*bei einem guten Trunk einen vergnügten Tag zu machen*).

Establishment of the "Theological Foundation."

This establishment, organized after the pattern of one previously existing at Marburg, was the most important benefit which occurred to the university from the reformation; richly supplied Wirtemberg with clergymen and teachers, and made Tübingen a leading theological university.

It was supported by annual payments from the parish treasuries, according to their ability. Two God-fearing men, one from the citizens and one from the university, had charge of the funds. Each beneficiary received 25 florins a year, of which 18 were reckoned as the expense of board. A provost or steward (*Hausvater*) had charge of the boarding arrangements, and was to see that the living was decently good. The necessary corn and wine were to be furnished at a moderate price, from the ducal granaries and cellars. The rector, the high bailiff of Tübingen, and the mayors (*Bürgermeister*) of Stuttgart and Tübingen, were to audit the accounts, and to act as general supervisory authority over the institution and pupils. Each beneficiary bound himself to study only at the university of Tübingen, and to labor within the duchy of Wirtemberg.

After some years of difficulty arising from insufficient oversight and loose habits among some of the beneficiaries, the senate of the university, at first unfriendly to the foundation, from fear of its trenching on their privileges or income, consented to take charge of it, and rented half of the *Burse* building, to which the pupils, 39 in number, were admitted in May, 1541. Three however were excluded because they were married, two for insufficient attainments, and for bad character. Two masters were put in charge, one called *magister domus*, and acting as a superior to the steward, and the other, called *preceptor*, to conduct the studies. Both were to live in the *Burse*, be present at meals, and to drill (*repetiren*) the beneficiaries on the lectures an hour daily.* A beneficiary had 6 florins salary for giving directions to new comers.

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* Thus in 1605, when Prof. Menzer of Marburg came to Tübingen, the rector put it to vote in the senate, what should be done to honor him. It was decided to invite him to a supper (*coenula*); and as he declined this in consequence of a prior invitation from chancellor Haffenrefer, they sent him two measures of malmsey and sugar.

† When the exiled patriarch of Constantinople was visiting Crusius in 1600, the senate complimented him with three Hungarian ducats.

As to interior arrangements the stipendiaries were admonished not to forget that they lived on alms. At rising—in summer at four, and in winter at five—they offered a special prayer for the duke, in consideration of their benefits from him. At dinner the Bible was read, and at supper some historical book; and after eating they might walk, or indulge in any proper sports. All must be at home by eight at night in summer and seven in winter, and delinquents were deprived of their wine. Imprisonment in the *carcer* was inflicted for attending dances and drinking-bouts. The ordinary side-weapons were allowed only on journeys. The letter of the statutes permitted the younger pupils to be whipped with the rod. One, named Gabler, left because he had been well whipped several times; and another from fear of it.

Condition and finances of the University after the introduction of the Reformation.

Little alteration was made by the reformation in the constitution of the university. A change became necessary in the chancellorship. The chancellor was originally the representative of the Pope, and one of his especial duties was to sanction in the Pope's name the giving of academical degrees. Ambrosius Widmann, the chancellor for the time, had at the beginning of the controversy fled to Rotenburg to avoid it, and also to make a difficulty for the reformers. A long series of negotiations followed, but without inducing the obstinate Romanist either to resume his functions or to delegate them; during which either no degrees could be given, or those actually conferred were not recognized by other universities; and when valid ones were once more conferred, they were sanctioned no longer *apostolica auctoritate*, but in the name of the state; *auctoritate publica et ordinaria;* the civil government, by an application of the reformed principles, taking the place of the Romish See as supreme authority.

It also followed on the same principles as applied to the university, that it ceased to be an ecclesiastical corporation, and had to be reorganized as a secular one, the government assuming an increased share in its regulation and internal management. Thus, the duke now approved the choice of theological professors, as having the right to appoint them to their canonries &c.; a ducal ordinance designated adherents of the Augsburg Confession and persons of experience in church matters in Wirtemberg, as the only ones from whom to chose them, &c., &c.

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* This was substantially the same duty as that of the present French *répétiteur*.—*Trans.*

The disqualifications and disadvantages of the faculty of arts were under the new regime gradually to some extent removed.

An important part of the constitution of the university consisted in the privileges of its officers, such as an independent legal jurisdiction, freedom from tolls and taxes, independent control of the university property, &c. There were some other minor privileges, not found mentioned until after the reformation. Thus the professors might retail a certain quantity of wine. When this privilege was granted is unknown; but it existed and was ordinarily exercised, and occasioned sundry controversies with the town. It was at last agreed, in 1541, that each university official might bring into the town, free of toll, what wine he needed for household use, also what grew on his own property, and if he kept house, thirty casks more per annum, to sell at wholesale or by the glass. The town government frequently complained that this permission was abused by the introduction of an excessive quantity on pretence of storing it up, &c.

The privileges of the university officials as to the acquisition of real estate were also diminished, by an ordinance of 1545, permitting each, besides what he might receive by inheritance or marriage, to own a house and barn, and if a professor, 300 florins' worth, and if any other official, 200 florins' worth of lands. The higher limit was afterward raised to 400 florins. Each official was also allowed pasture for two cows and two goats.

The special privileges of the senate as to inheritance led to a long and angry controversy between that body and Duke Frederic I., arising from his promulgation of a new code whose application to the university was resisted. They were, however, at last obliged to conform to the law of the land.

Under Duke Frederic, the university received a new set of ordinances, and new faculty statutes, but with no essential change. Among the more prominent, were a requirement that all the teachers of the university should subscribe to the "*Formula Concordiæ*," and the appointment of a regular commission for visiting the university; a mark of the increasing control of the government, and first introduced at the reformation.

The ordinance of 1601, gave the senate privilege of censorship The printers were forbidden to print any theological tract or controversial writing, until it had been passed upon by the senate. Disputations, orations, and wedding or funeral sermons, were to be submitted to the chancellor, or to the dean of the theological faculty. The other faculties decided upon publications within their respective departments, or if thought necessary, referred to the members of the visitatorial commission. Nothing might be reprinted without the knowledge and consent of the former printer, or the permission of the senate.

Toward the end of the sixteenth century, the salaries of the professors were much enlarged, although the property of the university did not increase. Thus, Frischlin, while not yet ordinary professor, received, in 1575, 174 florins. Various additions were given, also, in kind. Thus medical professor Mögling, in 1616, received 210 florins salary, 26 florins senatorial allowance, 15 florins allowance for rent, 12 florins wood money, 32 bushels spelt, 4 bushels oats, and six casks (*Eimer*) of wine. In the next year, the income of the university was 15,886 florins in money, 6,000 bushels spelt, 600 casks (*Eimer*) of wine, and a large amount of other produce; the expenditure 12,000 florins. This increase resulted from improvements in the property, and the rise in the price of produce.

Great carelessness and peculation often prevailed among the financial and other officers, and occasioned many severe reprimands from the visiting commission. Thus, five per cent. was the usual deficit of the income payable in corn, and often more. Great quantities of wine were also embezzled. The coopers, &c., drank without limit, and much was taken on pretence of filling up casks. In 500 casks, a deficiency of eighteen was thus found. The rector, chancellor, four deputies and syndic, each used to take two measures from each wagon-load as it was brought in; which, to save appearances, they commonly drew in the cellar after storage, and rather more than their share. Any remainder after distribution to the various officers of their shares, &c., was not stored or sold and the proceeds invested, but divided among the senate, and various other impositions of the same kind were practiced, by embezzlement, bribery, &c., both in the grain and wine department, and upon the cash in the university treasury.

The Thirty Years' War, seriously decreased the property and increased the debts of the university; and we find the expenses estimated in 1652, at 7,800 florins cash, 1,400 bushels spelt, 140 bushels rye, 450 bushels oats, and 200 casks wine.

Literary Condition after the Reformation.

The theological faculty soon recovered from the dubious condition into which it fell at the introduction of the reformation, and rose to a position of great influence in the theological controversies of the period. Beurlin, Heerbrand, Jacob Andreä and Stephan Gerlach gained great renown in the army of Protestant orthodoxy. It is true that they failed to win permanent reputations, because they neither established any new principle, nor any peculiar modification of the Protestant system. They were only close followers of the scholasticism of Lutheran orthodoxy; but they acquired great influence in the church, by vindicating their belief against any real or fancied variations, with vigorous and unwearied polemic efforts. In most of the theological controversies, conferences and attempts at union, of the second half of the 16th century, we find Tübingen theologians in the first ranks of the combatants. Jacob Andreä, one of the most influential Protestant theologians of his day, especially distinguished himself by energetic labors and travels throughout Germany, by means of which he succeeded in gaining the assent of a majority of the German princes and theologians to the "*Formula Concordiae*." This creed, adopted in 1581 by three electors and twenty-one princes, became the rule of faith for the church of Wirtemberg, and was required to be subscribed not only by all holders of offices in the church, but by all the professors of the university.

These and the other Lutheran champions made Tübingen a chief arsenal of the militant Lutheran orthodoxy, which prevailed in Wirtemberg with so much exclusiveness that it was not inappropriately termed "the Lutheran Spain." The university requirement of strict orthodoxy was extended even to the students. A visitatorial rescript of 1584 complains that there are many foreign students who privately and publicly advocate Calvinism; which causes many parents to be troubled lest their sons should be perverted from the true faith; and therefore requires a watchful eye to be kept upon these, and the proper means of correction used, or that if obstinate and irreclaimable they be dismissed; as the duke will not endure Calvinism or any other harmful error at the university. In 1593 and afterward, the theological faculty were required, after the Frankfort fair, to examine the book-stores, lest any sectarian books may have crept in, and Calvinistic ones especially, as those of Calvin, Beza, Pezelius, Aretius and Piscator.

The juridical faculty was not so prosperous during this period, which was indeed not a flourishing one for the study of law in Germany, although in France illuminated by the fame of Cujacius. Several of the jurists of Tübingen, as Nicolaus Varnbüler, Mathæus Enslin, Christoph Besold, were men of some eminence both in the university and in the state; but their mode of instruction was a frequent subject of reproof from the visitatorial commission, for diffuseness and prolixity of lectures, omission of the prescribed disputations by the students, and their neglect of juridical studies for political ones. Professor Johannes Halbritter, for instance, was found fault with for occupying two whole years with his course on the two first books of the institutions; and ordered to get through the whole work in two years. He remonstrated, saying that at least three were necessary, but some years after we find only one year allowed for the course on the Institutions.

Similar complaints that the students neglected jurisprudence for "*studium politicum*" were made, from 1605 to 1609. This term included subjects of national finance, civil and ecclesiastical administration, proceedings against heretics, &c. The modern authors used on these subjects were especially Justus Lipsius, Bodin, de Thou, and Æneas Sylvius, and the period of history searched for materials was that of the Roman and German empires. Of Macchiavelli, the chief politician of the time, few traces appear.

Disputations on theses from the portions of law under consideration were contrived, for the sake of relieving somewhat the dryness of the study, and the professors were exhorted to make them acquainted with its practical applications, by proposing cases for their decision, and conversing on them.

The medical faculty fills quite a subordinate place during the same period; and they confined their instructions to expositions of Galen and Hippocrates. The extent of their independent investigations of nature may be judged by the fact that, in 1588, the faculty, on being admonished by the visiting commission to institute anatomical lectures, replied that they would have such holden as often as they could procure a *cadaver*. This was difficult, as no law provided for procuring any, and the students, if they desired to have a dissection, had to contribute money to procure a corpse from some executioner.

There was no botanic garden. Leonard Fuchs appears to have had a private one, but no trace of any appears afterward. For studying botany, apparently the favorite natural science, the professors were directed to take the students into the fields and show them the herbs and simples.

It is a significant index to the condition of medical science at the period, that various professors shifted from the philosophical to the medical faculty, and vice versa. In fact, medicine was in theory only physics and metaphysics, as exegesis a philology of Galen and Hippocrates, and as practice no application of any theory at all, but mere incoherent quackery.

During this period the faculty of arts or philosophical faculty remained in a quite subordinate relation to the other faculties; a position which could not but influence its prosperity.

A detailed course of study was prescribed for this faculty in 1557, by which the first class of the Pædagogium was to study Melanchthon's Grammar, Cicero *De Amicitia*, Virgil's Bucolics, with industrious study of prosody, and reading and explanation of Terence; and in Greek, every day half an hour of grammar, and half an hour of Xenophon. For the second class, are prescribed Cicero *De Officiis*, and his orations and letters; and Linacer is recommended as the best grammar. The Greek grammar and Xenophon are continued. The third class is to study Melanchthon's Dialectics and Rhetoric, Cicero's Orations and Letters, and in Greek the Philippics of Demosthenes and Xenophon's Cyclopædia; and the fourth, Aristotle's Organon, Rhetoric, and *Partitiones Oratorias*, Cicero's Orations, and mathematics. All the classes were also to write on given subjects weekly, and examined and drilled on Saturdays in Ciceronian phrases.

For the university lectures proper, in arts, were recommended "the most celebrated and excellent authors, such as Homer, Hesiod, Euripides, Sophocles, Demosthenes, Plutarch and Xenophon." No particular authors are named for Latin, which seems to have been finished in the Pædagogium. Melchior Volmar, however, lectured on that language daily. Hebrew was taught alternately in this and the theological faculty.

Besides the languages, lectures were delivered in the faculty of arts on the following subjects: dialectics, rhetoric, the ethics, physics and organon of Aristotle, geometry, arithmetic, spherics, and *theoria planetarum*. In music, an instructor from Nuremberg was invited, who was to lecture and drill the students, under the regulations of the faculty. History was not a distinct study, but was only a collateral department of the professor of *litteræ elegantiores* or of rhetoric.

The studies in this faculty were feebly taught, and its internal administration confused and disturbed. Complaints were made at different times from 1560 to 1630, that the instruction in Aristotle's Dialectics and Organon was inefficient; that the *lectiones classicæ* were taught *exiguo fructu*, and with too wire-drawn expositions, more than six months, for instance, being used on one book of Homer; that the exercises in style were not thoroughly taught, and that the historical lectures went on sleepily; that the instruction at lectures, disputations and declamations, covered too much ground, and was wearisome; that the ethical and political portions of the old writers were taught, to the exclusion of Latin and its elegances; that a contempt for logic prevailed, and that its true use was not taught, but metaphysics and real knowledge confused together.

Special institutions connected with the University.

The theological "*Stipendium*" or foundation, during the present period, became a prosperous and important institution. Its purposes were especially promoted by Duke Christopher's organization of many of the sequestered convents into preparatory schools for theological study. These schools received boys of fourteen or fifteen years old, and taught them for three years, when if fitted they entered the *Stipendium* at Tübingen. In these schools there were two teachers, one for the study of the Scriptures, and the other for rhetoric and dialectics. Especial attention was paid to Greek and Hebrew.

The theological foundation was reorganized in 1557, with some changes. With it were also connected the foundation of Michael Tyffernus, for four sons of poor and pious parents, whether natives of Wirtemberg or not, desiring to study theology in Tübingen, and that of Count George von Mömpelgard for ten beneficiaries from Mömpelgard, Reichenweiher and Horburg. Among the students of the theological foundation at this period, were Egidius Hunnius, the Wittenberg theologian, and Johann Kepler, the astronomer.

Much disorder and rebellious conduct prevailed at various times among the students on the foundation; but the Thirty Years' War, by crippling its income, cured all these difficulties by almost extinguishing the *Stipendium* itself. As prosperity returned, however, after 1648, the disorders came back with it.

An organization intended by Duke Christopher to do for the State nearly what the *Stipendium* was to do for the church, was the *Collegium illustre*, established by him in 1559, to educate sons of Wirtemberg noblemen from their ninth to fifteenth year, appropriating 20 florins a year to each. If hopeful pupils, they were then to receive 40 florins a year until the age of twenty, as students in the university, with free lodgings; and then ten of the best each year received 100 florins a year for three or four years to be expended in traveling for their improvement. They were bound to enter the duke's service if required, and he was to select his councillors and high officers from among them.

But Duke Christopher's son and successor, Duke Ludwig, entirely broke up this scheme, and transformed the *Collegium Illustre* into a mere independent, aristocratic school of proud, idle and debauched young noblemen, as well from Wirtemberg, as elsewhere, who instead of the regular university course, pretended to debate questions of polity, finance, economy and government, but were ringleaders in all the iniquities of the students, and a pest to the university. Both the instructors and pupils were quite independent of the university jurisdiction; a sufficiently ill-judged arrangement. The greatest prosperity of the *Collegium Illustre*, was at the beginning of the seventeenth century. In 1599, its students included eleven princes and sixty noblemen; in 1606, nine princes, five counts, and fifty-one other nobles. In all, thirty-six reigning princes pursued their studies there. The Thirty Years' War rendered it necessary to close the *Collegium*, which was afterward re-opened, but never regained its former prosperity.

Besides these two ducal foundations there were various private endowments, for furnishing lodging and board to their beneficiaries. Such was the *Martinianum*, founded in 1514, by Martin Plantsch, theological professor, and George Hartsesser, dean in Stuttgard, to supply eighteen students with board and lodging, in a house occupied for the purpose. It was for poor young men of good talents and character. During the sixteenth century were founded various family endowments, for some seven or eight additional students to be accommodated in the Martinianum; namely, the Farner, Lemp, Gockel, Mendlin, Vogler and Pfluger foundations; and in the following century, those of Laubmaier, Drach, Hallberger, Dempsel, and Ziegler. The most important gift of this kind, was that of Criminal Procurator J. M. Fickler, of 9,000 florins, invested to support nine beneficiaries of the founder's family, in a separate house.

The *Hochmannianum*, founded in 1603 by J. Hochmann, professor of canon law, was another similar foundation. Another, and a quite important establishment, was the endowment of professor Gremp von Freudenstein, established by his sons-in-law after his death in pursuance of his wishes (he left no sons); for the descendants of himself, his brother Dionysius Gremp, and his cousin, Hans Conrad Gremp, councillor to the Margrave of Baden. This was endowed with 20,000 florins, and was to educate the beneficiaries in all desirable studies, up to their twenty-fourth year. A foundation library was also provided for. The allotments from this fund were, at first, fixed at 60 florins a year, from 10 to 16 years; during the philosophical course at Tübingen 70 florins, in the other courses 80 florins., and at other universities 120 florins. This endowment grew important in the course of time, and some of the families entitled becoming extinct, and others remaining small, the capital, notwithstanding losses in war, in 1823, was 175,000 florins, and in 1849, 230,000 florins;

from which each member of the families of Gremp von Freudenstein and Leutrum-Ertingen is entitled to receive during a course of education of eighteen years, 9,600 florins.

The sum set apart to increase the Gremp Library was fixed, in 1804, at 200 florins annually. The books may be used by the foundationers, by the university instructors, and, on permission of the administrator, by others also.

Morals and Manners, Reformation to Thirty Years' War.

The condition of morals and manners at the university during this period, was almost inconceivably debauched and brutal. Street fights between students and citizens, with stones, swords, halberds and lances, the most excessive orgies of drunkenness, organized rebellions by the students, murders, stabbings, the grossest licentiousness, befoul the pages of the university history to an inconceivable degree. Dueling however seems to have been scarcely practiced until after the Thirty Years' War. Too many of the professors were involved in similar vices. They did not mingle in the students' drunken-bouts, street fights and nocturnal riots, but were sometimes almost openly licentious, very commonly addicted to the excessive use of wine, and often permitted the most disgraceful disorders to creep into their own families, invoking the aid of the senate to constrain a scolding wife, or a rebellious child, or to enforce reparation for the lost honor of a daughter.

A corresponding looseness and extravagance naturally prevailed in eating, and in dress; on which subjects frequent regulations were made, but to little purpose. Wine was remarkably cheap at Tübingen, but every thing else very dear; so that a student's total expenses seem to have been, for instance, quite double what they were at Marburg.

Some traces of the organizations called "Nations" and "*Landsmannschaften*" appear, but no details. The practice of pennalism seems not to have been so extremely abused here, as at most other universities.

The first actual contact of the university with the Thirty Years' War, was in May, 1631, when a report was brought in that six hundred musketeers were on the march to rob the convent. There was great fright, money and jewels were hidden, and the university plate sent to the syndic's house; but the alarm proved false. But during the July then following, a detachment of the imperial army was quartered in Tübingen, and from that time until the peace of Westphalia, the university was oppressed with unrelenting extortions in the name of contributions, both by Swedes and imperialists, chiefly the latter, however, who squeezed the unfortunate institution with a special delight on account of its notorious and rampant and not very tolerant advocacy of a stiff Protestantism. Important portions of its estates were also sequestered, it was forced to admit a Catholic to the deanship of St. George, and was plagued with public discussions by Jesuits, who strove zealously, under imperialist protection, to reëstablish Catholicism in the "Lutheran Spain." These impositions almost destroyed the university, and almost starved its instructors, who lost either most or all of their incomes for the time being.

III. FROM 1652 TO THE ACCESSION OF DUKE CHARLES, 1737.

Literary Condition.

The Thirty Years' War inflicted great injury upon the university. Sickness and trouble destroyed many of the professors, fourteen dying from 1634 to 1638. The number of students decreased proportionally, the young men being employed in military service, and those who grew up in their places not acquiring any taste for literature; so that it was not necessary to fill the vacant chairs. The professors who remained were impoverished by the excessive contributions levied, and their means of pursuing their studies thus lessened. Many of them had also become corrupt in morals; for at the first visitation after the war, we find complaint made that the professors were in the habit of spending whole nights in the "university house," or at the beadle's, gaming, drinking, and rioting.

The university seemed in danger of entire ruin; but not only survived, but rose to increased eminence. Duke Eberhard III., and his councilor, Nicolaus Myler von Ehrenbach, were efficient patrons of it, and gradually its vacant professorships were filled, the salaries newly regulated, and the different foundations reorganized.

Theology was during this period, as well as the previous one, a science of controversy; and proficiency in it was measured not so much by profound investigation and broad comprehension, as by skill in polemics. Among the most eminent of the Tübingen theologians during this period were, Tobias Wagner and J. A. Osiander; as well as Wölflin, Häberlin, Raith, Keller, and Foertsch. Of these, Wagner held the place of *professor controversiarum;* and it was his duty to go through all the current points in controversy, and after stating the opposite arguments, to give a written decision of them.

In 1700, the theological studies were laid out on the following plan: the *professor controversiarum* was every year to refute some one class of adversaries; the *professor theologiæ theticæ,* to go at least once a year through the compendium of theology (that of J. W.

Jäger, was then in use), and examine his auditors upon its contents; the dean was to read each year upon one of the books of the Old Testament; the professor of the New Testament, each year on one at least of the Gospels, some practical lectures (*collegiæ practica*) were also to be given, to instruct the students in an edifying style of preaching, and in an easy mode of catechising. Professor of morals Hochstetter, and *magister domus* Hiller, were to have charge of this department, and to lecture on any Saturday's when the ordinary professor was prevented by preaching or confession.

The inaugural oration of the chancellor C. M. Pfaff, in 1720, affords a view of the general character of theological studies in the first quarter of the eighteenth century. He complains bitterly that the theological students busy themselves exclusively with the bread-earning part of their studies, without acquiring any sufficient preparation in philosophy and philology, and without any deep practical knowledge of divine truth; and that the consequence is a dry and unedifying character of pulpit speaking, a purely theoretic theology, and the entire devotion of their zeal and energy to the persecution of those who vary in the least from the precise standard of orthodoxy, with the view of proving them hetrodox or heretic, indifferentist or syncretist, when they scarcely know themselves what indifferentism and syncretism are.

Besides the theologians above named, should also be mentioned J. C. Pfaff, father of the chancellor, J. W. Frommann, G. Hoffmann, and C. E. Weismann. Chancellor Pfaff was the most eminent of them, and had a European reputation.

The predominance and character of the theological studies of this period threw the philosophical faculty quite into the background. Its studies were regarded as little more than preparatory to the theological course. Very many studies which should supply the various parts of a general liberal culture, such as philology, history, ethics, languages, mathematics, &c., were, for the most part, carelessly or superficially taught and studied.

But the faculty, richest in distinguished teachers during this period, was the juridical. The most eminent of these was Wolfgang Adam Lauterbach, one of the greatest jurists of his time, a favorite instructor, and the author of the "*Collegium Pandectarum*," published after his death, and long in great repute. Others were Erich Mauritius, F. C. Harpprecht, Schweder, Scheffern, and Schöpff.

The high reputation of the Tübingen jurists however occasioned them to be so much occupied in consultations and drafting opinions on questions of legal practice, that their lectures were negligently prepared, and their students, in consequence, fell into very irregular habits, being also much corrupted by the debauched example of the young nobles of the *Collegium Illustre.*

The medical faculty was in a wretched condition, consisting for a time only of Johann Gerhard, much employed as a practitioner, but of little eminence as a man of science, and Samuel Haffenreffer, now an aged man, of whose instructions nothing is known. There was neither a school of anatomy with a supply of bodies for dissection, a botanic garden, nor a hospital. After a long resistance from the professors, who wished to use the space for a pleasure ground, a botanic garden was laid out, but even then was not completed for twenty years. Even so late as 1725, it was thought remarkable that Prof. J. G. Gmelin, then a student at Tübingen, had been able to be present at the dissection of two corpses. During the latter portion of this period, however, this faculty rose to a somewhat higher celebrity, by the exertions of some eminent professors, G. B. Mezger, E. R. Cammerer, B. D. Mauchart, Alexander Cammerer, J. Zeller, &c.

Special Institutions.

1. *Collegium Illustre.*—This institution, which was quite closed during the war, was afterwards reopened, but was attended by a decreased number of princes and noblemen from abroad. The management of the institution was now somewhat less disconnected from that of the university, the chairs of instruction being sometimes filled by professors; and the senate in one case at least formally protested against an appointment in the Collegium of one Lang, an enemy to the university. The salaries of instructors here were however much smaller than those of ordinary professors.

2. *Evangelical Stipendium.*—This institution increased after the peace so rapidly that it became necessary to enlarge the building. In 1667 it contained 213 persons in all, of whom seven were "repetents," 188 students, five proselytes, twelve officials and *famule*, (students paying their expenses by menial services,) and the *magister domus.* The proselytes were refugee monks; but were mostly worthless fellows.

The institution suffered a temporary inconvenience in consequence of the French invasion in 1688, but only for a short time. In 1704, a separate statute book was drawn up for the *Stipendium*, of the same general character with the university code, and containing many stringent regulations as to studies and deportment. The immediate charge of the students was intrusted to the repetents, who were chosen no longer from among the masters who were still pursuing their studies, but from those who had completed them, and who were eminent not only for attainments in learning, but for prudence and good character. They were to watch over the general condition of the *Stipendium* and to report on it, and to hold a *repetition* at least once in eight days, in theology and philosophy, on the basis of the authors used in the lectures.

There were many regulations for maintaining good conduct and morals, such as the prohibition of drunkenness, gaming, dancing, smoking and licentiousness. All unnecessary luxury in dress is forbidden, such as silk waistcoats, red and blue hose, &c. A wig was allowable only when the physician prescribed it. At table all must wear a cowl; a relic of monkery which was not agreeable to the students, and maintained for the sake of preserving something of the conventual discipline. Many other regulations were made on very insignificant points, rather for the sake of keeping up the same obsolete order of things than for any especial moral influence.

3. *Private foundations.*—No particular change took place in these during this period. The Martinianum and the Fickler foundation together occupied a new building.

Morals and Manners.

The moral condition of the students would naturally be somewhat unsatisfactory, as they had grown up under the unfavorable influence of the Thirty Years' War. But the visiting commissioners found it necessary in 1652, to administer to the professors also a reproof for their frequent debaucheries and gaming in the university house. It is characteristic that in the same report, these same professors are praised for their pure and correct orthodox belief.

Detailed testimonies to the condition of matters among the students are wanting; but there remain so many records of proceedings in cases of tumults and other excesses, that there can be no doubt of the coarseness and brutality that prevailed. But the previous kind of fighting was now more and more displaced by the practice of dueling, which began to come in about the end of the period before this, and which was now a standing article in disciplinary investigations and proceedings. Many enactments were made for the prevention and punishment of the practice, by dismissing principals and otherwise punishing other partakers, &c.; but with no important result. The first important investigation on the subject was in 1657; when the parties were punished with eight days imprisonment and twelve reichsthalers fine, and the seconds with six thalers fine. Mrs. Professor Gerhard was concerned in this affair, the quarrel which occasioned it having arisen at her house. She was summoned before the senate, but examined privately by Profs. Lauterbach and Haffenreffer. She was fined ten reichsthalers and forbidden to keep boarders; it being thought improper, as her husband was so much absent from home, and unable to see what was going on there. Mrs. Gerhard complained bitterly of this decision, saying that she had much wine in her cellar, which she could not pour into the street, but must keep boarders to drink it out, unless she was to be deprived of her living. And she said that there were disturbances at other boarding houses, without causing them to be prohibited.

There were many similar investigations during the next ten years, but, on the whole, dueling does not seem to have been more frequent at Tübingen than at the other universities; and none of them were fatal. Very noticeable lenity was used toward sons of eminent persons or nobles in punishing for this reason.

There were also other disturbances, such as extended feuds between the stipendiaries and the other students, and the students and the servants of the nobles in the *Collegium Illustre*. Other disorders and licentiousness seem, on the whole, to have somewhat decreased during this period, except in the first ten years of it, when we find among houses of evil repute that of Mrs. Prof. Harpprecht, whose three daughters had a most undesirable reputation. In 1658, some stipendiaries were rejected because they frequently visited the Misses Harpprecht.

The boarding houses kept by many of the professors, and their retail wine-selling business, occasioned much social intercourse between them and the students. This wine trade also caused many complaints from the citizens, with whose business it seriously interfered. Beer seems to have been also frequently drank. Tobacco smoking was apparently introduced about 1660, and was first prohibited in the *Stipendium*, on penalty of imprisonment and dismission.

There are no very distinct details, but some few traces of the existence of students' societies, orders, and Landsmannschaften. We find the senate prohibiting "Garlands," "conventicles," and "kingdoms." These last were undoubtedly regular organizations for social debauchery, with a king at the head, officers, and codes.

The origin of the orders, and of the grades, derived from Pennalism, of Fox, Bursch, Mossy-Head, and Gold-Fox, is doubtless quite ancient; and here we are to look for the rise of very many of the fantastic-student usages, the comment, and the dueling practices.* When the gradual amelioration of manners extinguished the evils of

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* For an account of Pennalism, see Barnard's "*American Journal of Education*," Vol. VI.

Pennalism, its custom of abuse of the "Foxes" or freshmen remained longest in the theological *Stipendium*, where, according to old custom, they were made to perform all manner of menial services.

IV. FROM THE ACCESSION OF DUKE CHARLES TO THE CHANGE OF THE UNIVERSITY INTO A STATE INSTITUTION, 1737 TO 1811.

New Statutes under Duke Charles.

The interest taken by Duke Charles in the university, marked the beginning of a new epoch, about the middle of the last century. He gave the university many new regulations, but without introducing any essential change in its constitution.

With the view of enlarging the attendance, he enacted by an ordinance of July 24, 1744, that all youths intended for learned studies, should either pursue them at the university of Tübingen, or should at least study there for some years. And those who have now been studying abroad, or shall hereafter do so, were to present at Tübingen such a public testimonial (*specimen studiorum*) as may enable their native country to know what their studies have been. This is the first trace of any state examination to succeed the completion of a course of study. Other new regulations were intended to increase the efficiency of instruction, and the industry of both students and professors.

Such were reproofs of the careless and neglectful mode in which the professors labored; prohibitions of the common practices of dictating a lecture, reading some printed treatise in place of it, heaping up a mass of references and citations, and quoting authors not obtainable by the students, &c., &c. The censorship on matter to be printed by members of the university was confined to the respective faculties, but they were admonished, in all cases where practicable, to negotiate in a friendly manner with the author for the change of objectionable matter instead of proceeding publicly.

In order to remove the common complaint that the expenses of living at Tübingen were remarkably high, the senate was ordered to refrain from all unnecessary expenditures, such as printing the numerous poems of congratulation, condolence, &c., the "opposition dinners," ridings-out and receptions of boarding housekeepers, professors and students, costly processions, music for the rectors, &c. The students were to be prevented from giving so many presents, and expending so much money at weddings, visits, and with female acquaintance, &c. An earlier statute forbidding any landlord from trusting any one to the amount of more than ten florins was renewed.

The ordinance of 1744 was followed by a fuller one of 1751, new statutes in 1752, and another revision, with additions, in 1770; from which we quote the fees for private lectures and the doctor's degree. A half year's theological course cost three florins; a juridical course, on the pandects, (two hours daily for a year,) eighteen to twenty florins; on the institutions, or on church, feudal, criminal or common law (*Landrecht*), eight florins; on practice and law of nations, ten florins. A course on medicine cost six florins, on anatomy nine florins. If the number of hearers was too small, the medical lecturer might collect from fifty to sixty florins for his whole (half year's) course; or for a pathologico-practical course, lasting a whole year, from 100 to 120 florins. In the philosophical faculty only two florins were ordinarily paid for a half year's course, but in mathematics one ducat; for a course on the history of the German Empire six florins, but for one on universal history only two florins. An examination for a licentiate's degree cost, in the theological and medical faculties, for a native, ten ducats; for a foreigner, fifteen ducats; in the juridical faculty, seventy-five florins. The doctor's diploma cost sixty florins. At a disputation, the Præses was to be paid twelve florins, and three florins was also charged for each sheet of the disputation. If, however, the candidate had drawn this up himself, he need only pay the professor one florin per sheet for revising it. The degree of master in the philosophical faculty (master of arts) was somewhat cheaper, costing two florins, besides thirteen florins, fifty kreutzers to the funds of the faculty, and six florins for the subsequent dinner.

Personal relations of Duke Charles to the University.

Duke Charles showed an active interest in the university by often visiting Tübingen, for weeks at a time, and by taking part in various ways in the oversight and general discipline of it. Sometimes he attended the lectures of the professors; he allowed himself to be chosen rector during a number of years; he provided for various scientific departments which he observed to be wanting, such as an observatory, a chemical laboratory, an anatomical room, means for preserving the library, and an apparatus for experiments in physics. At these visits of the duke, he was received with much pomp, and his presence caused much excitement and occasioned much show, and many balls, concerts, &c. To all these many professors and students, the theological stipendiaries especially, were invited, and with them the duke took pleasure in much intercourse, both sportive and earnest. At the celebration of the third university jubilee in 1777, there was a remarkably magnificent display, with a procession, orations in many languages, banquets, disputations, &c., &c., extending over eight days. The honorary gifts to the university on this occasion, consisted not of rich drinking vessels, but of books; the city of Tübingen giving the

"*Museum Florentinum*," the Estates giving Dumont's "*Corps universel diplomatique du droit des gens*" and Rymer's "*Fœdera*," Esslingen, Baronius' "*Annales Ecclesiastici*," and Stuttgard, Sandrart's "*German Academies*," "*Weisskunig*," and several other works.

But the duke's interest in the university did not always continue. An independent corporation, not entirely under his authority, was not according to his taste; and he therefore founded another institution, which he could organize and manage entirely according to his own views. As this institution grew up, and was in 1781 made a university by the emperor Joseph, the duke entirely lost his affection for the University of Tübingen, to which there thus arose a dangerous rival. The number of students gradually fell from 311 in 1775, when the Charles Academy was transferred to Stuttgard, to 188 in the year 1791. This decrease appears still more remarkable on deducting the number of students from the city on the theological foundation; after which there were, in 1791, of jurists, only thirty-one; medical students, seven; and philosophical, two. Repeated applications were made to the duke by the university and the city authorities, but in vain, and matters remained in the same condition until the death of the duke, and the discontinuance of his academy by his successor.

Literary Condition.

An important document of the year 1751, serves to mark nearly the period of the introduction of a new kind of instruction in philosophy into the university, to wit: not in metaphysical speculation, but a rational treatment of empirical departments of learning, of those especially which admit of application to common life, state management, and industrial pursuits. This kind of philosophy was naturally a grief to the old professors who had stiffened in the ancient literary pedantry of their department, and it is no wonder that they earnestly warned the students against the lectures of the talented young professor Bilfinger, who had expounded the new views, and that they took great satisfaction in drawing off his hearers. The professorship of philosophy, vacated by the death of Bilfinger about a year before the date of this ordinance, was however filled by Gottfried Ploucquet, a man of the same school.

In 1750 a distinct professorship of history was established, and filled by the appointment of O. C. Lohenschiold; and C. F. Schott was, in 1752, made professor of poetry and eloquence, with which history had previously been connected.

The professorship of Greek and oriental languages was somewhat feebly filled during this period. Mathematics was better taught. An astronomical observatory was established in 1752 in one of the towers of the castle, and fitted with very good instruments for that period. In the same year an apparatus for experiments in physics was procured, and a large lecture room set apart for its use in the *Collegium Illustre.*

In the theological faculty, both the more intelligent method of comprehending religious dogmas, which Pfaff and Weismann had begun to introduce by the admixture of some of the principles of Spener, and also the philosophical tendencies of Bilfinger and Canz, had for a time to make way again for a stiff ecclesiastical orthodoxy, whose chief upholders were J. F. Cotta and C. F. Sartorius. On the other hand, J. F. Reuss, the chancellor, laying not so much stress on the teachings of the church, and more upon the letter of the Bible and the authenticity of the New Testament, aided in preparing the way for the exegetical school of Storr. The visitatorial reports had heretofore frequently recommended the study of theology; but in the year 1780, the number of theological students had become too large, and they had to wait until they were thirty years old or more before they could obtain appointments, thus losing the youthful vigor of mind and feeling which their duties require. To remedy this evil, no more children of the common people were to be received to study theology, unless in case of extraordinary capacity.

In the juridical faculty the course was reorganized by the ordinance or "recess" of 1744 into one of three years, a new one being commenced each year, and the lecturing so apportioned that three professors were engaged in it during the winter, and three during the summer. Many disorders prevailed in this faculty; and one professor, Harpprecht, was suspended and heavily fined in 1749, for nonfulfillment of his duties. But neither admonitions nor punishments availed with this faculty; and, in 1750, we find the duke in great wrath at finding it not improved, the recess of 1744 disregarded, the students obliged to resort to foreign universities, the public lectures almost wholly neglected, the private ones so disorderly arranged and so wearisome in extent, that scarcely any student could go through them.

The medical faculty had always been the smallest in number both of teachers and pupils; and even in 1772, before the academy at Stuttgard could have influenced it, we find only one medical student; a state of things probably in part owing to the fact of there being no trace of any arrangement for clinical instruction. Among its instructors in this period, however, are found several of distinction in their departments, as J. G. Gmelin, the traveler and botanist; his brother, P. F. Gmelin; a third member of the same family, J. F. Gmelin; the anatomist, G. F. Sigwart, and the distinguished practical physician, C. F. Jäger.

Transition to the Modern Period.

During the latter part of the last century, a period of new activity for university studies arose from the intellectual activity inspired in Germany, by the philosophy of Kant, by the political activity and speculations resulting from the French revolution, and by the wide extension of scientific researches consequent upon the growth of intercourse with European colonies.

Kant's philosophy was first introduced at Tübingen by J. F. Flatt, who was appointed extraordinary professor of philosophy in 1785, and who was zealous and successful in advocating it. The chair of history was filled in 1777 by C. F. Rösler, the first real historian belonging to the university, an eminent and useful writer and a successful teacher.

The philological condition of the university was not so good. The Wirtemberg divines had from old times the reputation of thoroughly trained philologists; but this was due rather to their instruction in the trivial schools than to that of the university. The philological chairs were filled only with theologians, who used the study of the ancient languages not for strictly philological purposes, but only for use in the explication of the Scriptures and in the usual Latin writing. No chair of classical literature was established until 1776, when D. C. Seybold was appointed professor. He was succeeded by K. P. Canz, a polished classical scholar, and known for his translations from Aristophanes, Æschylus and Sophocles. In oriental philology, Prof. C. F. Schnurrer had a European reputation, and was an efficient laborer and instructor.

In mathematics, the university enjoyed during this period the aid of several good instructors, and eminent in their science. Such were C. F. Pfleiderer, Wurm, Cammerer, Hauber, Pfaff, Renz, and J. G. F. Bohnenberger, a man of great physical and mental activity, and a good astronomer, surveyor and engineer.

But the most important of all the faculties during this period was the theological, in which the school of C. G. Storr introduced, in the latter part of the eighteenth century, a new phase of development. Storr's labors covered the period from 1775 to 1797, when he removed to Stuttgard. He was a man of extensive and profound learning, of earnest piety, a successful and industrious author, and as a teacher, interesting by reason of the interest which he himself felt in his work. Storr and his followers, departing from the theological systems of the seventeenth century, with their group of religious symbols and their great dogmatic authorities, introduced, though in a conservative spirit and with the design of counteracting the various phases of neology then making their appearance, a theology based upon the doctrine of the plenary inspiration of the Scriptures, and the diligent interpretation of its words, but which labored under the disadvantage of a tendency to base its conclusions upon single books, or isolated texts of Scripture. Among Storr's most efficient disciples and followers, were J. F. Flatt, F. G. Süskind, C. G. Flatt, and E. G. Bengel.

In the juridical faculty, we find prominent toward the end of the last century, K. C. Hofacker, J. C. Majer, J. F. Malblanc, S. J. Kapff, J. D. Hoffmann, and C. G. Gmelin, able jurists and successful teachers, who maintained the reputation and prosperity of that faculty.

The medical faculty, hitherto always playing a subordinate part, became in this period quite celebrated, chiefly by means of two learned men who exercised a most powerful influence upon the progress of the new principles in medicine, and acquired a European reputation. These were Kielmeyer and Autenrieth. Prof. K. F. Clossius, a good physician and a zealous instructor, had already succeeded, after long and unwearied efforts, in organizing an imperfect hospital department, which, after some vicissitudes, became under the care of Autenrieth an important aid in the medical instruction of the university.

Evidence of the good condition of science at Tübingen is to be found in the scientific organ of the university, the "*Gazette of Literature,*" (*Gelehrte Anzeiger,*) which appeared, though with important intermissions, from 1737 to 1808. It was at first called the "*Weekly Literary Novelties,*" (*Wöchentliche gelehrte Neuigkeiten,*) and was both a literary journal and a vehicle of intelligence on the subject, containing brief notices of new books, and the lecture lists. At a later period, its contents were chiefly rather descriptions of and extracts from new books, than critiques on them; the other matter being principally on natural science, literary, history and law; theology being comparatively neglected. Still later, when revived by Schnurrer in 1783, it was a close imitation of the "*Göttingen Literary Gazette,*" and was a journal of considerable value, especially for its reviews on subjects of speculative philosophy.

The theological *Stipendium* long adhered strictly to the ancient Lutheran orthodox dogmas and symbols, and unfriendly and severe investigations were repeatedly made into the motives and management of the prayer-meetings which began to be held by students inclining toward the beliefs of the Moravians. Besides the pietist sentiments which thus developed themselves, rationalism began to show itself and to gather strength in the last ten years of the century. Duke Charles took much interest in the *Stipendium*, sometimes himself taking part in theological deputations, and often dispensing praise and reproof as he thought necessary to professors and students. The disciplinary arrangements on details of clothing, such as cowls, cloaks, &c., occasioned much trouble, and much ridicule. The students indulged excessively in beer and card-playing, evading the rules in many ways, and taking many opportunities to make sport of their instructors. Many of the wild ideas to which the French revolution gave rise, made their way into the minds of the students, amongst whom there were democrats and royalists who disputed vehemently with each other, even to the extent of street fights and duels. Some of the republican students even set on foot a correspondence with the French general, Custine, which occasioned an investigation, and the flight of one of the students most compromised. Some of the students used also to represent comedies, and a general spirit of disobedience and rebelliousness infected the whole institution, which at one time broke out into an organized riot or movement of the students, who marched in procession with music, insulted their instructors, and sung forbidden songs in the market-place. Various vain attempts were made to reëstablish the ancient strictness of discipline, but to no purpose; the kantian philosophy, and even rationalism and infidelity, and many more wild notions, had rooted themselves too firmly. In 1808, was discovered a sort of conspiracy or scheme, having an odd similarity to the "Pantisocracy" which so nearly made Coleridge, Wordsworth, and Douthey, settlers in Pennsylvania. Some theological students, with some from the city, had elaborated a plan of a natural model state on republican principles, which they proposed to organize on some island in the South Pacific. They made many preparations; hired laborers, were having girls educated, learned trades. had set up a common treasury, and statutes, to which each member swore to observe on penalty of being punished "according to the law of nature." A member who had joined in hopes of getting his debts paid, on being disappointed, revealed the plan to a clergyman and he to the government; an investigation followed, some of the students were imprisoned for a time, and the scheme was broken up.

Since the middle of the eighteenth century, the *Collegium Illustre* fell into entire disuse. There was still a principal (*Oberhofmeister*) and professors, but no princes, not even from Wirtemberg; and thenceforward the building was only used to lodge the duke or other high officials at their visits to Tübingen. The Burse also was partly empty, and was rather a burden than a source of income to the philosophical faculty, which owned it, and which was therefore pleased at its change into a clinical department in 1802.

Manners and Morals.

Complaints continued to be made about nocturnal tumults, and many reproofs and commands were issued to the university and town authorities on this point, but seemingly without accelerating the amelioration which time gradually introduced. Thus, in 1778, there was a regular skirmish between the students and towns-people, which originated in a quarrel about a dog which some boys, as the students claimed, set on them in the market-place. This contest lasted for several hours, the beadle and watchmen in vain endeavoring to repress it; and many serious wounds were inflicted on both sides.

The feuds between the city students and the stipendiaries also continued. In 1780, a student fired a pistol at the window of the *Stipendium*, having been attacked with stones by the students there. At the funeral of Chancellor Cotta, the two opposing parties quarreled about precedence. The procession itself took place without disturbance; but the stipendiaries, who had been kept out of it, revenged themselves by an attack afterwards, during which numbers on both sides were severly cudgeled, and parties meeting at various places, pistols and swords were drawn, but there were ultimately no further results except abuse, threats, and some slight wounds. About ten stipendiaries were imprisoned for from six hours to twelve days, and one city student received a dismission (*consilium obeundi*). After this time the parties seem to have remained at peace with each other for a time, until the feud broke out again in 1792 and 3, when we find Hegel, afterwards the celebrated philosopher, one of the leaders for the *Stipendium*. He told one of the city students that they must keep out of the market-place in the evening, or run the risk of being shot down. The exciting occurrences of the period seem to have inspired the students with a warlike spirit, for we scarcely find at any other period so many quarrels, fights, and wounds. Dueling grew more and more frequent, but was still not as much practiced as at Heidelberg, Göttingen and Jena, during the same time; a fact due to the large proportion of students who were studying theology, and under a stricter supervision. The laws before enacted against duels remained on the statute book, but were very seldom applied in their full extent, and the defective police of the university rendered full investigation practically impossible. Fencing exercises were, moreover, regularly authorized, and were recommended as among the appropriate bodily exercises, "by the practice of which students are distinguished from the populace." A fencing master was always employed from the establishment of the *Collegium Illustre;* and in 1792 a second one was appointed; and there was also a riding master, and a master of ball-playing and billiards.

Visiting was mostly done by individuals, large assemblies not being common. There were, however, among the students some societies of a half literary and half social character. The Swiss physician, Am-Stein, a student at Tübingen in 1765–8, in a letter to his friend Aepli, describes one of these, at whose meetings, in a room set apart for the purpose, the members drank coffee, and had a Latin oration and disputations. They wore a gilded badge, and had a secret motto. Various professors were sometime present at their exercises and anniversaries. There were at the same time other students' societies, apparently merely for students' ceremonials, dueling, and drinking. A Free Mason's Lodge seems to have been erected among the students in 1765 by a doctor Richeville, but was attempted to be broken up by the authorities, notwithstanding the very good character of the members. Richeville was sent away from Tübingen, but the lodge remained; as the order at that time included many eminent and influential military and civil personages, and it was not thought best to offend them. An ordinance of 1770, however, declared all societies of the kind dissolved, forbid the wearing of their badges, and affixed severe punishments to the offence of being a member of one of them. We find, however, six years afterward, traces of students' societies, in a controversy which arose between two opposing parties, who elected two rival "seniors" of some such body.

New Ordinances under King Frederick, 1798—1811.

The main characteristic of this course of legislation was the discontinuance of existing privileges and exemptions. The first step in this direction was the ordinance of 1798, which revoked the former law prohibiting children of the common people from studying theology, and made admission into the theological department depend entirely upon the result of an examination.

Soon after the erection of Wirtemberg into a kingdom, was commenced a thorough revolutionizing of the constitution of the university. In 1806, it was enacted that in case of a vacancy in a professorship, the senate must in future ask leave to proceed to an appointment; the limit of penalties inflictable by the academical authorities was set at twenty *reichsthalers* and fourteen days' imprisonment; lawsuits between members of the university must go before the ordinary courts;

the booksellers, binders, printers, &c., to the university were deprived of their academical privileges, &c. Two days later the university was declared to be under the authority of the newly organized ministry of religion, and a curator, the well-known historian, L. T. Spittler, placed at his head, whose duty it was to be familiar with the condition of the university, to supply defects and wants as found out, or to bring them to the notice of the ministry; and in case of vacant professorships, to make nominations for filling them. The earlier law that all Wirtemberg students should spend some time at Tübingen was modified to enact that no one should offer himself for any official station requiring a learned education, unless he could show that he had studied at Tübingen at least two years; and in 1807, all persons were prohibited from resorting to any foreign university, and the professors were first forbidden to accept academical honors from any foreign university, and a few years later to accept any invitations from abroad.

New and strict disciplinary laws were also made; providing for monthly meetings of the senate to hear reports from the rector on the state of discipline; for increased amenability of the students to the ordinary legal authorities; for greater strictness in attending lectures; and for prevention of irregular indebtedness by the students.

Another law, encroaching deeply upon the prerogatives of the university, was that of 1810, subjecting the students to the military conscription. This, however, excited so much feeling that it was withdrawn, under color of a misunderstanding. In the previous year, Col. Von Lindenau had called on the students for volunteers, and of the number who enlisted, some became honorably distinguished. In 1811, the raising of the contingent for the Russian campaign producing a great demand for men fit for service, twenty students were forcibly enlisted as privates, most of whom perished during the expedition. The senate made a forcible representation on this measure, but received a rude reproof in consequence, with notice of an entire reform of the university constitution, which should completely discontinue all its privileges.

V. FROM THE END OF THE OLD CONSTITUTION OF THE UNIVERSITY TO THE PRESENT TIME—1811 TO 1848.

Reorganization of the University.

This took place under a decree of September 17, 1811, and although immediately a consequence of the king's initation at the reclamation of the senate against the forcible enlistment of the students, was a legitimate result of the change of the whole system of government, in whose centralized absolute sovereignty an independent corporation was a disagreeable exception. Under the new law, the university, as the highest educational institution of the state, was placed under the ministry of religious affairs, and at its head was set a curator, who was to be president of the Board of Studies, and to reside in Tübingen. This office was conferred upon Baron von Wangenheim, successor of the deceased Privy-Councilor Spittler, a capable and useful officer. His official duties were to watch over the teachers and students, and to take measures or make propositions for the improvement of the university; and to exercise, in conjunction with other officers, its remaining civil and police jurisdiction. The rector was now merely an organ for communicating the orders of government to the senate and its chairman. The chancellor's office remained as before, with a few changes; and the property of the university was managed by the public department of finance.

Admission to the university was made dependent upon a strict examination; the course of study in law and in medicine was fixed at four years at least, and in theology it remained at five years. Various other changes were introduced into the course of study, and strict examinations established at the end of each course of lectures, and of the whole course of study. Premiums were offered in all the faculties, to be distributed before the full senate; and to conclude, all the privileges of the university, and all its regulations inconsistent with the new law, were declared discontinued. Some months afterward, a uniform was prescribed to the professors.

The university, knowing the impossibility of resistance, received the deprivation of their corporate independence with grief and resignation. In 1816, however, when a general desire for a restoration of the old constitutional rights, the university also laid before the Chambers a demand for many of the powers and privileges which it had lost. The government included a grant of most of these demands in the form of a constitution, which it submitted to the chambers, in 1817, with a view of gaining the support of the university to the scheme; but while the plan as a whole was rejected, the grants to the university were accepted, and became a law June 13, 1817.

This state of things was, however, quickly ended by the decree of the German Union (*Bund*) in 1719, which subjected the university to a system of guardianship so strict as to result in the fettering of all free movements, and effectually to restrain all historical and political studies. Vice Chancellor Autenrieth was made extraordinary royal commissioner, with the duty of observing carefully the spirit in which the professors taught, and of directing it properly. All the academical teachers were warned not to transgress the limits of their duty, in lecturing to avoid all reference to cotemporary political tendencies, or if (as in history and statistics) some such reference was unavoidable, to use all possible prudence, on penalty of removal and banishment from the university.

The character of the professors prevented this action from being much felt, those whose duties were most likely to bring them in contact with the forbidden subjects, being either elderly and cautious men, taking little interest in the movements of the day, or such as were of reactionary tendencies. But the students felt it sensibly, as it maintained and strictly applied the existing laws against secret associations among them, a step which at once broke up the Burschenschaft, then in the highth of its prosperity.*

During the difficulties arising from the existence and suppression of the Burschenschaft and similar societies, a commissary was placed at the head of the university, with powers much like those of the extraordinary royal commissioner under the *Bund*. While this officer was employed, a proposition was put forward by the government to remove the university to Stuttgard, but after a sharp skirmish of pamphlets and anonymous articles, was dropped, being extremely unpopular.

The commissary was replaced in 1829, when a new change was made in the constitution of the university, by a head entitled a Chancellor, to be permanent principal of the institution in place of the rector, and to be appointed once in three years by the king. In this position was placed Autenrieth, who had already made himself disagreeable to his colleagues by his activity in the affair. There was also a vice-chancellor, and instead of the deans of faculty, those places were held by the senior professors. This new organization was eminently arbitrary, left the senate no duties except advisory and regulative ones, and gave most of the management of the university to the chancellor.

This constitution was received with very great disfavor, and was violently attacked both at home and abroad, and there was quite a flood of pamphlets and other publications for and against it. The result of the opposition however, was the appointment of a commission to prepare still another scheme of organization for the university, and to do away with the obnoxious features; and, in 1831, the united officers of royal commissary and head of the university were separated, the permanency of the latter office done away with, and the rectorate restored, to be appointed by the king annually from three nominated by the senate. The royal commissaryship was vested in the chancellor, who was to be appointed by the king, and to act as a general supervisor of the discipline and studies of the university. There was also appointed a business agent or manager (*universitäts amtmann*), to have charge of investigations into offences, prohibited societies, duels, &c., actual performance of executive duties, the debts of the students, and law business; aided, also, by an actuary. The faculties were again to possess their deans, who was to be chosen for a year in a certain order. The introduction of this organization gave satisfaction to the university, and its establishment was confirmed by a law of 1832.

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* For an account of the Landsmannschaften and Burschenschaft, see Raumer's "*German Universities*," edited by H. Barnard, pp. 53 and 80. Raumer makes many extracts from and references to Klüpfel.

Later Improvements.—Additions to the Faculty and Apparatus.

During seven years, from 1835 to 1842, in consequence to a great extent of the zealous efforts of Robert Mohl, a member of the senate, the university made great and important advances, the total sums expended for the purpose within that period, amounting to more than 200,000 florins. A new university house was built, with a large hall for solemn occasions, greatly improved lecture rooms, fourteen in number, an examination room, senate chamber, and faculty and chancery rooms. A large new hospital was also erected, affording much needed space for a clinical practice. There were added new professorships of geognosy, administrative management, political history and statistics, zoölogy and surgery, and all filled with able instructors.

The number of regular professors was fixed in March, 1843, by ministerial ordinance as follows, in the

	Ordinary.	Extraordinary.
Protestant theological faculty,	4	1
Catholic " "	4	1
Juridical "	6	1
Medical "	8	3
Philosophical "	9	3
Public-economical "	6	1

The present relative numbers are somewhat different. The scientific departments were, during this time, so far enlarged and improved as to answer all reasonable expectations, and to raise the university to a middle grade among those of Germany. Besides the strictly learned department, physical training was not neglected. A new riding-house was substituted for the old one, and the exercising-ground vacated at the dissolution of the Burschenschaft was made an official academical department, and a teacher of gymnastics was soon afterwards appointed.

Literary Condition, 1811 *to* 1848.

The system of half-yearly and final examinations introduced in 1811, has given rise to great complaint, as being an interference with freedom of study, by making the examination in certain departments obligatory. But the system has been maintained.

The philosophical faculty was not during the first part of this period very prominent among the leaders of German thought in its departments. Prof. Schott was a genial and witty man in society, but no enthusiast for philosophy. Eschenmayer, appointed as a representative of Schelling's school, was too mystical, and too confined to a narrow scheme of classifications, to satisfy the demands of the age. And Sigwart, appointed 1816, though clear in stating forms of thought, was not a profound nor productive philosopher. In oriental philology, modern philology and French, the instruction given was somewhat inefficient and inattractive. Von Wangenheim caused the establishment of a professorship of the German language and literature, which was for some time filled with no great success, by S. H. Michaelis, and was then left vacant. The chair of history, at first unsatisfactorily filled by the old professor, Rösler, was afterwards more efficiently occupied by Dresch, and by K. F. Haug.

From about 1830 to 1840, the situation of this faculty was much changed by the succession of new teachers.

In 1833, Dr. Moritz Rapp lectured on the scientific side of modern philology, commenting on Shakspeare, Molière and Cervantes, and explaining the physiology of language, with much force and effect. He also introduced a series of exercises in the production of parts of celebrated dramatic works, which excited much interest.

The Hegelian philosophy crept gradually into the university between 1828 and 1832, being earnestly investigated by some of the students, who kept it to themselves as a sort of aristocratic or esoteric philosophy, and some of them losing their interest in it afterwards, when, in spite of the bitter opposition of the professors, it was publicly expounded with great popularity by D. F. Strauss, then a repetent, afterwards author of the celebrated "*Life of Jesus.*" Strauss was followed by Fischer, a "new Schellingian," and he by Vischer, who inclined to an æsthetic Hegelianism.

A chair of geology having been established, Prof. F. A. Duenstedt was appointed to it in 1837; and he has been an acceptable and efficient instructor. This department had previously been in charge of a member of the medical faculty; and some other departments of natural sciences still remained so.

At the removal of Profs. Sigwart and Fischer from the university in 1841, a new movement was made to obtain a representative of the modern speculative philosophy, but was opposed by those who feared that the current tendencies of that philosophy were rather against than for evangelical Christianity. The former, however, substantially carried their measure.

From about 1838, the study of the oriental languages was quite flourishing at Tübingen, under the instructions of Julius Mohl, L. Kapff, Dr. Wolff, and G. H. A. Ewald, the last of whom, however, though learned and efficient in his duties, made himself very disagreeable as an associate, and after no very long period returned to Göttingen, where he had previously been.

To the department of the philosophical faculty belonged the seminary for teachers of real schools, and the philological seminary; both organized in the spring of 1838 under the direction of the ministry. The former was under charge of Prof. Haug, and was intended to afford a higher scientific training to those candidates for employment as teachers in real schools, as might desire it. Its instruction was given free by professors in the philosophical faculty, who received from the government a compensation for lectures in mathematics, physics, chemistry, geography, history, and modern languages. The members were also permitted to practice in the real schools, and received during two years, an allowance from the state of 150 florins a year. This institution was discontinued in 1846, the instruction not being as thorough as desired, and the instructors not taking sufficient interest in their duties, which were indeed mere additions to their regular employment. Since that time the same public allowance has been made to some candidates for places in real schools, who desire to study at the university, and present satisfactory testimonials.

The philological seminary is in charge of the two professors of classical literature, (at present Profs. Walz and Schwegler,) and the rector of the Lyceum. Its members are from the theological and other students; and the course of study consists in the interpretation of the classics, composition, and exercises in practical teaching in the Lyceum. It is intended to train philological teachers.

Evangelical-theological Faculty, 1812—1848.

In this faculty, Dr. Bengel was for a long time the most influential member. During his period, which may be stated as from 1812 to 1826, appeared the "*Archives of Theology and New Literature*," edited by him from 1816 to his death, and intended as a vehicle both for criticisms and for careful original discussions in its department.

A new period in the progress of this department is marked by the introduction of Schleiermacher's system of theology about 1829. This gave rise to much controversy, and to an increased interest in that department of study. In 1828, Prof. Steudel established the "*Tübingen Journal of Theology*," intended to keep pace with the progress of theological investigation, and to serve as a guide to opinion on the subject. Since 1830, the aid of various learned men, especially from among the colleagues of the editor in the theological faculty, has given this journal a fixed position in theological literature. Mention should here be made of Strauss' "*Life of Jesus*," a work whose reputation and influence are well known, and which proceeded from Tübingen while its author was an instructor within the evangelical-theological seminary there. The first of all the controversies into which the author found himself plunged, was one with Dr. Steudel, which attracted much attention. The death of Steudel, in 1837, left the theological faculty in an unsettled condition with regard to teachers, which is not yet (1848) entirely adjusted.

Evangelical-theological Seminary.

The influence of political movements upon this institution has already been alluded to. In 1811, a renewed attempt was made to maintain the strictness of the ancient laws as to drinking, &c., while the antique costume hitherto prescribed, was permitted to be exchanged for ordinary pantaloons, boots, gray over-coat, and round hat. This change resulted from Curator Von Wangenheim's dislike to see the stipendiaries in their quaint clerical costume in the beer houses. The political tendencies of the seminary are illustrated by the excitement at the report that the French Army was totally destroyed at Lützen, when the whole institution broke out into shouts of exultation, and for a long time nothing was to be heard except furious war-songs, *vivats* for Alexander and Wittgenstein, and *pereats* for Napoleon and the king. Some of the students enlisted for the campaign of 1814 into France, and for that of the next year.

There grew up about this time among the stipendiaries a tendency to single combat and to the usual dissipations of the students, quite inconsistent with the regular discipline, and very troublesome to the instructors. An investigation into alleged disorders of this nature, on complaint of the repetents, led to no result except the breaking up of some harmless associations among the foundationers. Much more interruption of their studies resulted from the passage and delay of some of the Russian, Austrian and Prussian army-corps.

In 1816, more complaints were made of the association of some of the stipendiaries with the "Corps," and their indulgence in a *Landsmannschaft* of their own, and the usual drinking and dueling. These proceedings were investigated and stopped; but the foundationers took part in the quarrel between the *Landsmannschaften* and the Burschenschaft, and thus had a disagreement between themselves. There was at this time a strong radical tendency amongst a large part of the stipendiaries, and indeed of the repetents also.

In 1826 a new set of statutes were enacted, substantially the same as at present in force. Their chief purpose was a stricter provision for the fixing and oversight of the whole course of study, which must be approved by the instructors for each student, and then followed by him. The plan has had one bad result, namely, to prevent the pursuit of any study besides theology, philosophy excepted. There was also established a system of written themes, sermons, &c., all to be prepared under strict inspection by the instructors; all the stipendiaries were required to attend church on all Sundays and festivals, except in case of sickness, &c.; going to taverns is forbidden, except occasionally in vacation; practicing the student-customs and all fencing are forbidden on pain of imprisonment or expulsion; smoking is prohibited except in the study-rooms; a uniform black costume is prescribed, except that a proper over-coat of not too violent a color may be worn, and gray pantaloons on working-days. Neckcloths must be worn, and may be either black or white.

During the present period, the growing demand for freedom produce frequent manifestations of dissatisfaction with the strict discipline of the foundation, and more than one plan was considered for discontinuing it, or remodeling it into a merely literary institution; these schemes being upheld by the evangelical clergy, who were displeased at the progress in it of rationalist and even theistical views.

The expense of the foundation has been, for the last three years (1846–8), at an average, 36,000 florins, with an average of 120 students. That of the current year (1849) is computed at 41,000 florins, Each stipendiary receives free lodging, dinner and supper, sixty florins a year in lieu of wine, fuel, attendance, medical services, and instruction, all gratis, at an expense to the state of about 280 florins per head. The salaries of teachers, &c., amount to 3,000 florins, of which the *Ephorus* or principal receives, besides free lodging, 600 florins; each of the nine repetents, board, lodging, 180 florins, and 100 florins wine money; and 3,700 florins more is expended for household services, performed by a steward, two under-overseers, four waiters, one repetent's servant, and nine students' servants.

Catholic Theological Faculty—the Wilhelmsstift.

After the large addition to the Catholic part of Wirtemberg, which resulted from the Napoleonic wars, the need of an institution for the training of Catholic clergymen began to be felt. In consequence of this, king Frederic I. attempted to supply the want by a so called Catholic Theological University, which he established at Ellwangen in 1812. This consisted only of a theological faculty with five instructors, and depended for the necessary introductory philosophical and philological instruction upon the gymnasium there, an institution not competent to the task. As the addition of these faculties would have demanded too large an outlay, it was decided to transfer the new institution to Tübingen, which was done during the fall and winter of 1817–18. The new faculty was installed as next in rank to the evangelical-theological faculty, with similar rights to the others. It consisted of five chairs; for ecclesiastical law and history, exegesis of the New Testament, oriental languages and the Old Testament, dogmatics, and ethics and pastoral theology.

But as there was no great concourse of students for the Catholic priesthood, and as many of those who would have pursued the requisite studies were prevented by poverty, the government resolved to establish a Catholic institution similar to the evangelical foundation, which was opened accordingly in the autumn of 1817, in the building of the old *Collegium Illustre*.

The new institution, usually called the "Wilhelmsstift," was under the authority of the Catholic ecclesiastical council, and admitted every year, after a competitive examination, forty pupils. The general character of the institution is very similar to that of the theological foundation, as regards interior arrangements, management, allowances, &c.; but the disciplinary regulations were much stricter, and less recreation and absence permitted.

Juridical Faculty, 1811—1848

A succession of instructors, all competent and some distinguished, have lectured in this faculty during this period. No change has been introduced in the course, except that lectures on the constitution and laws of the German empire, discontinued since the end of that empire, were reëstablished by order of the ministry in 1815, on the ground that many legal decisions yet valid and important, were based on that law, and were unintelligible without it.

Faculty of Political Economy.

This faculty, a supplement to that of law, was established in 1817, and may be said to have had predecessors in the *Collegium Illustre* and the "economical faculty" of the Karls-Akademie at Stuttgard. It was established in consequence of the recommendation of Baron von Wangenheim, as a means of furnishing public officers better trained in the various branches of administration. The departments to be taught were fixed as follows: theory of political economy, especially state polity, national economy, and finance; public administration, especially practical governmental management, (*regiminal-praxis*,) exchequer and finance management; agricultural economy; forestry; technology, trades, mining; and civil architecture. Lectures were also prescribed in the juridical faculty, on public law generally, state law, philosophy of enacted law, Wirtemberg common law, (*privatrecht*), as far as intelligible without a knowledge of Roman law, and financial law. It was intended to afford means of practical exercises in agriculture and forestry, but the plan did not succeed. In order to offer some inducements to students, it was decreed that in future supplies of public offices, preference should be given, other things being equal, to those who had studied in this faculty, and passed the faculty examination; and from four to six stipends were offered, to be given during the next ten years, of about 150 florins each, besides an annual distribution of prize medals, similar to that in the other faculties.

The attendance was at first large, in the second year being over a hundred; but soon decreased again, the higher authorities, themselves trained as clerks, neglecting to comply with the provision for preferring students, when vacancies occurred in the public service; and the instruction given by the faculty being itself defective. The number of students began to increase again however after the appointment of Robert Mohl as professor of public law. About 1836 the studies in this faculty were arranged into two classes, one for those intending to pursue financial employments, and one for those preparing for situations in the ministry of the interior.

This faculty gives the university of Tübingen an advantage over most of the German universities. Most of them have no similar one, and none one so complete. Its diploma of Doctor of Political Economy is sought after from every part of Germany; its organization has served as a model for similar ones even in France; Mohl's writings on the training of administrative public officers have mostly been translated into French, and in Sweden the examinations for such offices have been organized on the principles fixed by the Tübingen faculty.

Medical Faculty, 1811—1848.

During this period, this faculty flourished and extended its sphere of operations quite importantly; although no improvements of great consequence took place until 1835, the results of Prof. A. F. Schill's vigorous advocacy of the late new discoveries in medicine, and of the necessity for greater efforts to accommodate students. More beds were afforded in the hospital, and better clinical instruction, both from hospital and out patients, was enjoyed.

In 1841, Dr. C. A. Wunderlich, head of the clinical department, and Dr. Roser, established a medical periodical, the "*Archives of Physiological Medicine*," since edited by Dr. Griesinger, and which has done much service in its department.

The annual public appropriation for the clinical departments at Tübingen were, in 1847–8, 17,000 florins. That for the next year is computed at 23,000 florins. Besides this, there is an annual income of from 6,500 to 7,500 florins, from payments for board, &c., from an invested capital, and extraordinary appropriations.

Eschenmayer first introduced the department of insanity, and Dr. Leube aftewards lectured on it. The latter also proposed and planned an asylum for the insane, but it has not yet been erected. Some cases are received in the new hospital, and a few cells are fitted up for cases of mania.

The senate discussed a plan for a veterinary hospital as early as 1812, and one was ordered by the ministry, and money given for it, in 1817. J. D. Hofacker was also appointed veterinary professor in 1814, and lectured ably, but to no great effect, for want of practical illustrations. Hofacker died in 1829, and no successor was appointed. At present, occasional lectures on veterinary medicine are given by the veterinary surgeon of the district.

Three new ordinary professorships were established; and instead of the mere rudiment of a cabinet of natural productions, the small botanic garden with a green-house for exotics and no herbarium, a kitchen incapable of being heated for a laboratory, a little chapel for an anatomical theater, and a couple of rooms for patients, where one patient at a time could be seen exceptionally, there is now a large zoölogical collection, a cabinet of comparative anatomy of remarkable beauty and extent, a large building for botanical collections and investigations, one of the finest botanic gardens in Germany, two large chemical laboratories, a handsome building for human anatomy, with collections, already important, a well built, roomy and well furnished hospital, and a large building used as a lying-in hospital. And besides these material advantages, the medical faculty at Tübingen possesses another, perhaps hardly existing to an equal degree in any German university, that the professors now in charge of the most important institutions for practical instruction are young men.

VI. SCIENTIFIC COLLECTIONS AND INSTITUTIONS.

Libraries.

University Library.—The origin of this library is unknown; our first notice of it is, that it was burnt in 1534 with the Wisdom House, (*Sapienzhaus.*) It was slowly replaced, from poverty; its main additions being from the books of the convents broken up at the Reformation, which were divided between Tübingen and Stuttgard. There were also valuable smaller libraries in the *Contubernium* and in the *Stipendium Martinianum*, which, however, have entirely disappeared. An important addition was the library of Prof. Ludwig Gremp, already mentioned, of some 2,600 well selected useful volumes, all handsomely bound in hogskin, and especially rich in jurisprudence and theology.

The first regular arrangement of the library was made about the end of the sixteenth century by the librarian, Prof. George Burkhard, who completed an arrangement and catalogue in 1792. During the Thirty Years' War, the whole collection fell into great confusion, from which it was not rescued until about 1680. It did not begin to increase much until after 1750, a little after which time the librarian, Dr. Scheinemann, had the library open for use by the students, under careful oversight, twice or thrice a week. In 1774 arrangements were made which permitted a somewhat fuller use of it, but it was of very little service in the winter, being still in the lower dark rooms of the university house, where, if a book was wanted for use, it was necessary to go in with the beadle and a lantern, and carry the requisite writing materials. The students were now permitted to carry away books for from eight to fourteen days, on security of a professor.

The addition of the library of the philosophical faculty, and of the *Martinianum*, and of the valuable works presented at the jubilee of 1777, directed more attention to the library; plans were agitated for better rooms for it, and various private and other collections purchased and added to it, and in 1819 it was at length removed to a more convenient locality in the north wing of the Castle, which affords a very handsome library room, as now fitted up.

The want of a catalogue and of sufficient force for the service now caused great inconvenience, and many complaints and petitions for improvement. Prof. Herbst, appointed chief librarian in 1831, applied himself with great zeal and activity to introduce needed improvements; and an epoch of still greater importance for the prosperity of the library was constituted by the appointment of Robert Mohl as chief librarian in 1836. Since that time the management has been newly regulated, reading hours fixed at from 9 to 12 and 1 to 4, sufficient catalogues begun and nearly completed, more officers and servants employed, more room obtained for the increasing number of books, and largely increased appropriations for purchase secured, the whole amount being from 12,000 to 15,000 florins. The whole number of bound volumes now reaches about 200,000, besides about 50,000 dissertations and pamphlets, and some 2,000 manuscripts. The library thus ranks among the large European libraries, and is the largest of any German university, except that of Göttingen; although the unsystematic mode in which much of it was collected, and the character of its sources, renders it not so valuable for use as some smaller ones. It is in charge of a library commission, consisting of the chief librarian and six other members, ordinary professors. The administrative force is a chief librarian, (Prof. A. Keller,) two librarians, (Profs. J. F. J. Tafel and K. Klüpfel,) an assistant, an amanuensis, an under-overseer, and a servant.

Other Libraries.

Library of the Evangelical Seminary.—This was established as early as 1557, when the duke gave three casks of books, mostly theological, from the convent libraries. The number of volumes is now about 30,000, besides some MSS.

The library of the Catholic *Wilhelmsstift* contains about 15,000 volumes, two-thirds of them being the theological portion of the king's private library, deposited there, and the remainder from the library formed at Ellwangen, and from duplicates of the convent libraries.

The *Museum Library* contains some 1,400 well selected works on belles-lettres, history, geography, and politics, and about fifty scientific and literary journals, and twenty newspapers, which are kept at hand in the reading-room.

Other Scientific Collections, &c.

The *Cabinet of Coins and Antiques* is in the northeast tower of the Castle, in charge of Prof. Walz, and contains 2,022 pieces in all, including many valuable coins, bronzes, statues, casts and curiosities.

Observatory.—This was established in 1752, under Duke Charles, in the northeast tower of the Castle, and supplied with an iron quadrant made at Paris, two pendulum clocks, and two large telescopes between twenty and thirty feet long. In 1785 it was rebuilt; and in 1800, rooms were set apart for observations, and for a lodging for the astronomical professor. Under Bohnenberger, the collection of instruments was enlarged, as much as the small means accessible permitted. In 1845 it was much increased by the purchase of a large refractor from Munich, for which the observatory was rebuilt again, with a movable roof. This refractor was of six inches diameter, and eight feet focal distance. There is now a good collection of other modern instruments by the best makers; and though the establishment is by no means a first class observatory, it fully answers all the requirements of the university.

Philosophical Apparatus.—This was commenced under Stöffler. Under Duke Charles the collection was much enlarged, and, in 1804, a large hall and several chambers in the Castle were appropriated to it. With a few exceptions, the apparatus is now of the newest kinds, competent for all classes of physical experiment, and will compare well with that of any other institution of its class in Germany.

Collection in Natural History.—This was only commenced in 1802, when its foundation was laid by the gifts of several professors, an endowment from Baron von Palm, and an appropriation from the university funds. The mineralogical cabinet has much increased since a professorship of mineralogy and geognosy was established in 1837, and, especially, since it has been in charge of Prof. Duenstedt. It may now challenge a comparison with any collection in Germany, and surpass most of them in completeness and clearness of arrangement, and scientific classification. It contains about 100,000 specimens. The zoölogical and zoötomical collection, in charge of Prof. Von Rapp, is constantly increasing in value.

Botanic Garden.—During the years 1805–9, a new botanic garden was laid out under the care of Prof. Kielmeyer, but in low ground near the Ammer, and liable to overflows and frosts, and too damp for many plants. It had a forcing-house, and a gardener's house; but no lecture room, nor any accommodations for scientific labors, nor for preserving collections. During the last twelve years, however, a new garden has been laid out on higher ground, and these deficiencies quite well supplied.

Anatomy.—A new anatomical theater was erected in 1832–5, with a dissecting room with accommodations for more than 200 persons, a lecture room, rooms for dissections by students and for keeping preparations, subjects, and animals, and an anatomical museum. The clinical department and lying-in hospital have already been mentioned.

Collection of Models.—This collection for instruction in technology, is now accommodated in a separate building fitted up for the purpose.

Literary Representations of the University.

Since the discontinuance of the "*Tübingen Advertiser,*" (*Anzeigen,*) in 1808, there has been no general literary organ of the university, such as exists at Göttingen, Heidelberg, Halle, Jena and Leipzig. A plan for establishing such a one, in connection with a Wirtemberg association of learned men, was started in 1826 on occasion of the birth of the crown prince, but neither ever went into operation. Single faculties have, however, issued periodicals, as, for instance, both the theological and the juridical. The Catholic one still exists; the Protestant one lasted, with brief intervals, until 1840; the political-economical one until 1844. Some individual professors also published periodicals; as, Reyscher for German law, Zeller for speculative theology, Roser and Wunderlich for medicine, and Fichte for philosophy. In 1843, the younger professors of almost all the faculties seemed on the point of uniting in a common periodical; but the plan went into operation only partially, in the form of the present year-books, edited by Schwegler.

Since 1829 the use of Latin has been discontinued in official academical writings, programmes, addresses, dissertations and disputations. No festival programmes are any longer published, except on the king's birthday, and those customary at the announcement of the promotions to the doctorate of philosophy.

Instruction in Fine Arts, &c.

Instruction is given in riding by riding-master Baron von Falkenstein; in music, by music-director Silcher, well-known as a composer and leader; in drawing and painting, by the painter Leibnitz; and in fencing, dancing, and gymnastics, by masters in those arts.

Propositions for Reform.

Prof. Fallati of Jena, originated a proposal of an assembly of university instructors in Jena in 1848, and a little afterwards, the university of Jena sent out invitations to the other German universities to appoint each four representatives to a reformatory convention to meet at Jena, as a convenient and central point. Four were chosen at Tübingen; two from the ordinary professors, one from the extraordinary professors, and one from the private instructors (*Privatdocenten.*) On behalf of each of these three bodies, proposals for reform were drawn up, the first of them recommending the substitution of an assembly of all the instructors for the present senate of ordinary professors; and the last, submitting a new constitution in detail, adhering generally to the corporate rights of the university, but recommending the cessation of its exempt jurisdiction, a similar substitute for the senate to that just mentioned, and an executive committee for current administrative business.

Manners and Morals.

Not much can conveniently be said on this subject during the present period, aside from what has already been mentioned in discussing the Burshenschaft.

The government prohibition to enter beer houses (*Kneipen*) in the forenoon, was somewhat mollified in 1837, but though often remonstrated against by both students and professors, is still in force. This is to some extent a hardship, as in Tübingen the students depend upon these public houses for social intercourse, much more than at most of the other German universities, as but few family circles are open to the students, and then only to relatives, or those in some especial relation to a professor. Large social assemblies are quite rare. There is usually in winter a sort of assembly (*Casinogesellschaft*) at the museum, at which some families and some students are usually present. There are also occasional balls.

Among the elder members of the university, there are various social circles, one of which in particular has existed for some ten years, and consists mostly of professors, at each of whose meetings conversation is varied by a discourse from some one of the members on some literary subject of general interest. There have of late been various efforts for the literary and æsthetic improvement of ladies. Thus Prof. Vischer delivered, during several winters, numerously attended lectures on literary history; Dr. Bröcker lectured to ladies on general history; Dr. Leibnitz on the history of art, &c.

In 1858, there were 72 professors, of whom 46 were ordinary professors, 9 extraordinary, 2 honorary, 16 privat docentes; 704 students, viz., 118 in catholic theology, and 146 in protestant; 193 in jurisprudence; 111 in medicine; and 136 in philosophy.

V. CHARACTERISTICS OF THE AMERICAN COLLEGE.

[From a Discourse by Cornelius Conway Felton, LL.D., before the Alumni of Harvard College, on his Installation as President, on the 26th of July, 1860.]

BRETHREN, we stand here to-day as the representatives of the oldest university on the American continent. Our Puritan ancestors brought with them from Oxford and Cambridge the English scholarship of their age. They were among the best educated men of their times. They were among the noblest men of any times. If their memories ever cease to be honored here—if among the changes that advancing years are always making in the opinions and works of men, the names of the Puritan fathers shall ever be scorned or forgotten here, the smile of heaven shall no longer rest upon us, and these fair structures, now crowded with studious youth and visited by the light of unexampled prosperity, shall crumble to the earth, blighted with the curse of God. John Harvard, whose honored name the institution bears, was a Cambridge man, and the name of the place, Newtown, was early changed to Cambridge—*Cantabrigia Nov. Anglorum*—Cambridge of the New Englishmen. Harvard College became the corporate designation, and the university at Cambridge its descriptive synonym. The earliest seal bearing the motto "VERITAS," appears in the records of 1643, the one now commonly used with the motto *Christo et Ecclesiæ* having been introduced at a later and uncertain date. The earliest degrees were conferred by the president, with the sanction of the *honorandi viri* and *reverendi presbyteri*, upon the *juvenes quos scio, tam doctrina quam moribus idoneos esse pro more academiarum in Anglia*, according to the usages of the universities in England. Indeed, the early society of New England generally was organized upon the social principles of Old England.

The precedence yielded to rank; the privileges, exemptions and honors, conceded to esquires and knights—there were few of higher rank among the Puritan aristocracy—would astonish and offend this easy mannered age. These feelings were shared by the scholars and governors of the infant college. In the class-room and chapel the pupils sat according to the social position of their fathers. It is ordered by the earlier laws, that *scholarium quisque donec primo gradu ornetur, ni sit commensalis aut nobilis alicujus filius, aut militis primogenitus, suo tantum cognomine vocatur.* "Every scholar, until he receives his first degree, shall be called only by his surname, unless he be a fellow commoner or the eldest son of a knight or nobleman." Some of the ancient laws are more applicable to the present time than the one I have just quoted. For example, "they (the scholars) shall honor as their parents, magistrates, elders, tutors, and aged persons, by being silent in their presence, except they be called on to answer, not gainsaying, showing all those laudable expressions of honor and reverence in their presence that are in use, as bowing before them, standing uncovered, or the like."

"They shall be slow to speak, and eschew not only oaths, lies and uncertain rumors, but likewise all idle, bitter scoffing, frothy, wanton words and offensive gestures."

The following brief rule has a much wider application than to the scholars of a college:—

"None shall pragmatically intrude or intermeddle in other men's affairs;" and there is a Latin law which was by no means a dead letter, though in a dead language: "*Si quis scholarium, ullam Dei et hujus collegii legem sive animo perverso, seu ex supina negligentia, violarit, postquam fuerit bis admonitus, si non adultus, virgis coerceatur.* "If any of the scholars, from a perverse mind or supine negligence, shall violate any law of God and of this college, after he has been twice reproved, if not adult, he shall be scourged with rods."

I forbear to make any application—scholars now are all adults.

I must quote one more as a law greatly needed every where:—

"No scholar shall taste tobacco, unless permitted by the president, with the consent of their parents or guardians, or on good reason first given by a physician, and then in a sober and private manner." Begging pardon of my numerous smoking friends—and no man has more or better—I can only say that if the scholars taking tobacco depended upon the permission of the president now, cigars, pipes, snuff and quids, would quickly disappear from the college premises. But alas! the smoke of tobacco, like the smoke of sacrifice offered to idols among the ancient heathen, has led the generation of men astray, and the breath of human nostrils goes up to heaven—if indeed it goes there all—ἑλισσομένη περὶ καπνῷ.

I must not dwell on these characteristics of the past. The history of the university has been admirably written by my venerable predecessor, President Quincy. I will only remark in general that every record of the proceedings of our ancestors in relation to the institution shows that they had large and liberal purposes. They aimed to educate a learned clergy, but not that alone. The general education of the people was embraced in the scope of their enlightened plans, and they included in their idea of a scheme of general education the general principles of the highest possible education. The university was upreared side by side with the schoolhouse as an indispensable part of the instrumentalities of civilization. They built up a state which they resolved should be a Christian state, but their conception of a Christian state included the widest range of human learning. They were no fanatics of a single, narrow idea. They were men of piety, but not an ignorant piety. They thought the chief end of man was to glorify God, but they would glorify him by unfolding to the highest possible extent the faculties of the human soul which he created in his own image. We smile as we read some of the quaint and ceremonious requirements of the earliest college laws. Manners change in external manifestations from age to age; but the basis of good manners, respect for the rights of others, modest estimate of self, honorable submission to established laws, deference to venerable age, illustrious character and official station, reverence for sacred things—these are the foundation of the manners of gentlemen every where and in all times. Our ancestors had this in view in their rules of order, however quaintly expressed, and they were wise men in requiring of the academic youth good manners as well as good morals—the minor morals as well as the greater morals.

I am glad to say, though many of the ancient ceremonial observances have passed away in the course of time, the spirit of our rules remains the same; the object, namely, to train up Christians and gentlemen, remains the same. I will venture to affirm, in no boastful spirit, but with devout thankfulness, that the object has been in good measure accomplished in these academic retreats. No one can be more conscious than I am, that young men, during the period of their university life, are often restless under college rules, and take it ill that they are called to account for the violation of what they are sometimes pleased to consider petty restrictions. I have entire confidence in the honor of the great mass of students. I believe no body of young men are in the main more truthful and magnanimous. I have nowhere met persons more gentlemanlike, better bred, better behaved, or with better purposes, on the whole. Yet I must say that those speculative gentlemen who maintain that the rules of order which students are required to observe within the college premises are superfluous, know but little of human nature or student nature. Bring four or five hundred persons, young, middle aged or old, learned or ignorant, pious or impious, or even angels, together without laws, and a superior power to enforce them, without rules of order and the authority to require their observance, and in a month these quiet and studious scenes would become a pandemonium. A lady may now pass unattended, at any hour, through the college grounds, secure from seeing or hearing any thing to alarm or offend her. Mothers never think of warning their daughters not to cross the college precincts, day or night, for they know the spirit of the place, and that maiden delicacy has never been wounded by word or act, and that the safety is absolute. Take off the restraints—which some young men think so grievous, and justify themselves in striving to resist—for a month only, and the Faculty would receive a petition, unanimously signed, to restore them all, if not to make them more rigorous than they were before. Law is the only condition of society—much more, civilized society. A state where every man does what is right in his own eyes, where there is no restraining power to check his whims and passions, is not a state in which progress can be made. Homer understood that well when he described the lawless one-eyed Cyclops and his shaggy brethren of the mountains and caves—fit companions of the beasts that perish. The laws necessary to institutions of learning vary, perhaps, in details, according to circumstances. I think our University owes no inconsiderable part of the great influence it has exercised upon society, to the fact that while it has remodeled the special forms of its laws and orders, when the spirit of the age required, it has always enforced not only the moral law in its highest sense, but the minor morals, which are the manners of gentlemen.

There is a saying of ancient wisdom, that he best knows how to rule who has learned how to obey. Submission to the law is the best discipline for the august task of making laws. To the American, more than to any other, the early lessons of obedience are needful. Our only security is in the law, and in ready and intelligent obedience to its sovereignty. It was a noble sentence of Plato that the magistrate is not the servant of the people, but the servant of the LAW. An opposite view has taken too strong a hold upon our heady Demos. All men and all things are supposed to be subjected to the shifting gales of the popular will. Law is the expression of Eternal Right, beyond the reach of the caprice of the moment. It is, in its highest form, the voice of God. "The Laws from Jove"—*θέμιστες παρὰ Διός*—is a phrase of Homer's, who knew all the profoundest truths of human experience. Education includes this obedience to Law as one of its vital elements. To leave the young without this influence is more dangerous here than in other countries; because, in no other country has the citizen, on attaining his majority, so direct an agency in the affairs of government. The three years of academical freedom (the academische Freiheit) of the German University are not so dangerous there as they would be here, because the moment the Bursch takes his degree, he falls for life under a rigorous system against which it would be vain for him to struggle; his daily bread depends upon his daily obedience. And yet, even there, a growing sense of its evils is beginning to manifest itself. When I explained to some of the learned men on the Continent, the college system generally prevalent in America, by which students at the University are held to the daily performance of their duties—duties which they can not go far in neglecting without being called to account—and that too during the four years of college study, until the young men reach the average age of twenty-one—they agreed that our system was much better than theirs, and one of them, raising his hands, exclaimed, "Would to God we had it here!" Our danger is routine; their's is license. On each side the special danger is vividly felt, and the special advantage of the other clearly perceived. We sometimes give too strong a preference to the German University system; they are sensitive to its peculiar evils, and perhaps exaggerate the advantages of ours. A system which should unite the excellence of both, would come as near perfection as a human institution can attain.

And this leads me to a topic on which I feel it my duty to say a word. I am aware that some have fancied that the law of the state can not cross the boundary lines of the college premises, whatever deeds may be perpetrated there. I shall speak my mind frankly, because I think the time has come when the subject should, once for all, and in the most public manner, be set in its true light. In a well ordered society, when crime has been committed, the public law steps in to vindicate its supremacy, and citizens of every grade and calling stand before its dread tribunal on the footing of exact equality. No fear or favor, or personal solicitations, can set aside its stern decree, or abate the penalties it inflicts on the doers of evil deeds. I know of no power in the college or the state, which can make these grounds an asylum for crime. The faculty, corporation, and overseers, combined, could not arrest for a moment the footsteps of justice pursuing the offender into the college domains. There is no right of asylum for wrong and violence near the altars of learning and religion. It is to the honor of our students that the cases of offence are so few and far apart that the very memory of one dies out before another occurs; and when one does occur, both the act and its legal consequences come upon them with surprise. The course of the law strikes them as a novelty, which they sometimes vehemently resent. And then we hear from many quarters that we are a paternal government, and that sounding phrase is considered argument enough to condemn the most indispensable course of well considered action. A paternal government—the Austrian and Russian despotisms are paternal governments.* That can not be what they mean. It is the family government, perhaps, to which they refer. What family government ever shielded its members from the penalties of violated law? What father ever had the power or the right to protect his son from the officers of justice, even if it was the paternal mansion itself which the reckless youth had burned to the ground? Family government—I suppose the thing somewhere exists. I know the art in former times was understood; but there is a figure of speech which the grammarians denominate catachresis, and which young men at college sometimes wittily employ when they call their fathers "the Governors" —*ut lucus a non lucendo.* There is a story told of a discussion among a knot of students at Cambridge, not here, but in England, on the interesting subject of their governors—when one, more filial than the rest, tried to check the petulance of his comrades by saying: "After all, let us remember that they are our fellow creatures." That kind of paternal government, the government of those "Governors," we do not think will answer here. I take it upon me to say that these grounds, consecrated to learning and piety; these buildings, that so many generations have inhabited; this property, the charities of our ancestors and our contemporaries, dedicated to science, letters, education, and to the worship of Almighty God—all these enjoy the protection of the law. No man shall lay the hand of violence on these sacred trusts. High privileges secured by the gifts of generous and pious men, are no excuse for midnight outrage and barbarous violence. He who forgets the dignity of his calling as a student, his obligations as a gentleman, his honor as a man, and sets the laws of the land at defiance, runs the same hazard as any other man, either of detection in the act, or of conviction and all its consequences afterward. Crime is no more a joke within the college walls than it is without, and the false idea that it is, is a dishonest and corrupt-ing sophistry, not to be tolerated for a moment by any conscientious administration of college government.

From the small beginning of the college, when, according to the witty verse of the president (Dr. Holmes) of the day,

> "Lord, how the Tutors knocked about
> The Freshman Class of one,"

it has grown to a great university, wholly in accordance with the liberal spirit in which Harvard College was founded. John Harvard's gifts, and the contributions of successive friends of learning in the early times, were noble examples—small in amount, but large in proportion to their worldly means—and nobly have they been followed by the Hollises, the Alfords, the McLeans, the Gores, the Eliots, the Phillipses, the Lawrences, the Appletons, the Grays—time would fail to name them all—who have made the institution what it is. The state, animated by the spirit of the fathers, cherished the college, sometimes by annual appropriations and sometimes by special benefactions; but by far the larger part of its means, now in activity in all its departments, have come from private sources; in a great measure from the generous citizens of Boston, whose names will be forever identified with the progress of learning here. To the college proper have been successively added the divinity school, the law school, the medical school, the Lawrence scientific school, the botanical garden, and the observatory; and last, but not least in the bright array, the museum of natural history, built by private liberality and the enlightened munificence of the commonwealth. The college—Harvard College—the germinal institution giving its corporate name to the whole, and the other establishments grouped around it—make collectively the University. What is an university? It is a permanent establishment, in which all knowledge, all means of scientific and literary research, all the accumulations of study and experience are gathered together. It is built, not for one age, but for all ages; its aim is to advance the human race in all that exalts and dignifies the life of man. The recorded wisdom—the written speech of any civilized nation—should be treasured on the shelves of its libraries; its museums should contain every product of the handiwork of God: its laboratories should have every material and every instrument by which nature can be interrogated and the thoughts of the Almighty read. Men of the most distinguished genius, of the largest acquirements, should be drawn into its service. Studious and eager youth should find the ample page of learning ever unrolled. Withdrawn from the tumults of the world, and its maddening ambition, here truth alone should reign supreme. In the still air of delightful studies, here the growing intellect should ripen undisturbed by the passions which agitate society. A university should bind together the students who enter its halls in the hallowed friendship that grows from common pursuits of the noblest kind, and is nurtured by the generous sentiments native to the heart of uncorrupted youth. It should bind the ages together by the most elevating associations that can act upon the finer feelings of the soul. For beneath its immemorial trees have walked the great and good of past ages, and the most illustrious of our contemporaries. In these apartments they studied and conversed, in these lecture rooms they listened to the learned men who guided their studies and trained their unfolding faculties to the great tasks of life. Here first they exercised their logical reason or glowing fancy on congenial themes. Every spot of ground, every shady tree, every trodden path, every wall, turret, pinnacle, is linked to sacred memories, that hallow the days of hope and youth passed here. We recall with delight such venerable images, such exciting thoughts. We seem to see the forms of illustrious men still haunting the places dear to them in the days long since gone; we seem to listen to the voices of the great orators whose fame has filled the world; of the poets whose song has added new charms to life; of the illustrious cultivators of science who have read the laws of nature or conversed with the stars.

> Rapt in celestial transport they,
> Yet hither oft a glance from high
> They send of tender sympathy,
> To bless the place where on their opening soul
> First the genuine ardor stole.

It is these associations of the present and memories of the past, that create the strong attachments cherished by the graduates of a college for the place of their education. The fond feeling that grows stronger with age, and kindles with a brighter flame as the lamp of life burns dim, is that of a child for its mother. If a college education added nothing more to the sum of human felicity than the consciousness of this tender love for Alma Mater—the cherishing mother of our minds—it would be among the best and most effective agencies for the progress and refinement of society.

We are already far enough removed from the beginnings to have the sense of antiquity steal with its softening influence over us, as we recall the past of Harvard University. Ancient visages adorn our walls and look down from the canvas upon our festal assemblies. We begin to count our years by centuries. Quaint traditions have descended to us from the days of the Fathers; and the hues of eld are creeping over our academic halls. "My own belief," says Dr. Arnold, "is that our colleges of Oxford and Cambridge are, with all their faults, the best institutions of the kind in the world—at least for Englishmen." And so I say, "My own belief is, that our colleges of Cambridge, and Amherst, and Yale, and others like them, are the best institutions of the kind in the world—at least for Americans." I have felt the mighty rush of solemn and impressive associations that sweep like a tide upon the soul at Oxford and Cambridge. I have paced the quadrangles, meditated among the cloisters, read in the libraries, and wandered over the green lawns and soft meadows in those old university towns; I have gazed on the portraits and statues of their illustrious men; I have delighted my sight with the architectural splendors of their venerable colleges, chapels, schools and theaters. The effects of the education there obtained are wonderful and admirable. We see a body of gentlemen formed under this influence unsurpassed in the world; we see a dignified and learned clergy; statesmen blending the classical tastes they have acquired there, with manly abilities in practical affairs, adorning the drudgery of business and the details of official duty with the graces of the muse; Canning, and Pitt, and Fox, refreshing their energies exhausted in the strife of the Senate, or with the cares of government, by gladly drinking at the Pierian spring; Brougham writing essays on ancient eloquence, and translating Demosthenes; Carlisle, filling the interval between two vice-royalties by studying on the spot the topography of Troy; Gladstone, illustrating the scholarship of the age, while unbending from the severe toils of arranging the budget and adjusting the revenues of a mighty empire, by writing three volumes on Homer, which henceforth no student's library can be without—these great scholars and statesmen tell us what the highest forms of English education do for the leaders of thought and action in our mother land.

Again, the German universities have been justly held up to our admiration—not quite so justly to our imitation. The vast erudition of the German professors—their profound speculative powers—the gigantic contributions they have made to the treasures of learning, entitle them, as a body, to our reverence. They have made the study of the German language a necessity to learned men every where. The freedom of their lecture rooms, the endless accumulation of books in their libraries, the liberality with which the stranger is allowed to avail himself of them, give the German universities a prominent and most beneficent position in modern culture. He who denies this because German speculation has sometimes lost itself in the clouds of mysticism, or because German rationalists have sometimes attempted to undermine the established truths of history, sacred and profane, by the senseless jargon of the "mythical theory"—or because a few German naturalist—naturals they should be called—have striven to dethrone the Creator, and to set up in his place an inexorable law, as the Merimnophrontistae of the old comedy exalted Dinos to the place of Zeus—he who, offended by these intellectual excesses, rejects the good there is in the profound and faithful studies of German scholars and philosophers, runs into a fanatical extreme in the opposite direction. The German scholars and German universities have performed an important part, and perhaps have a still more important part to perform, in the progress of science and letters. Recognizing fully the merits of the English and German universities in their respective spheres, I yet do not hesitate to compare our New England system—not in a boastful, yet not in a deprecatory spirit—with theirs. American colleges have a somewhat different task to accomplish from that either of the German or the English. The young American, passing from the university into the world, is seized by the current of events and strongly and inevitably borne along. All too soon he becomes a politician, philanthropist, reformer. The questions which agitate the age as the winds lash the heaving ocean, belong not, at least in their party aspect, to academic life. The young man here must learn the principles which shall help him to meet them when the moment comes. Let there be at least these short years of calm for intellectual growth. Let there be no premature excitement of passions, however laudable in themselves, by turning the thoughts of academic youth from liberal pursuits in this brief prelude, soon to be followed by the tragic complications, the fierce emotions, the bitter, unsparing warfare that rages over the field of life. Here let a barrier to the encroaching sea of political and philanthropic strife over which it may not pass be raised. Let our academic holidays be the truce of God wherein all may lay aside their armor and meet on the common ground of the *Literæ Humaniores*—the Humaner letters, as good learning was once beautifully called. There are places enough, times enough, occasions enough for the *gaudia certaminis*—the joys of battle. For God's sake, let the din of war never be heard in the grove of the academy. Our young American needs more than the European youth, the training that shall give him composure and self-command; that shall give him the mastery of his faculties, and the habit of steady action. He is a citizen of a vast republic wherein every man has his career to open, his fortune to make, his success to achieve. He feels every moment the social or party pressure, and the weight of individual responsibility. These very circumstances make the period in which we live one which tempts the young man into premature activity. He is allured into the busy scene when his faculties are but half unfolded; his principles are yet uncertain; his views vague; his hopes gorgeous as the rainbow, and perhaps as fleeting and unsubstantial. His tastes are unformed and his moral being crude as the unripe fruit of early summer. A solid character is not the growth of a day; the intellectual faculties are not matured without long and vigorous culture. To refine the taste is a laborious process; to fortify the reasoning power with its appropriate discipline is an arduous undertaking; to store the mind with sound and solid learning is the work of calm and studious years. It is business of the higher education to check this fretful impatience, this crude and eager haste to drink the cup of life; to exhaust the intoxicating drafts of ambition. By our laws a man becomes his own master at one-and-twenty. Our Constitution provides that the President of the United States must be at least thirty-six; and Aristotle makes this same age the suitable one for a man to marry. True it is that one man is older, in all that constitutes true manhood, at five-and-twenty, than another who has passed his grand climacteric. This difference comes partly from natural endowments; but chiefly it is made by the different use of natural endowments. The one has dawdled life away, half asleep or something worse, till all the energies he had are made unfit for use. The other was probably fortunate in the early discipline of parents, who knew better than to yield to his childish folly; who neither spoiled his bodily health by indulging his appetites, nor his mental health by yielding to him when he shrank from toil, as all boys will shrink at times. He passed from school to college, applying the manly habits already formed to the appropriate labors of the place, shirking no task, however trying, on any plea of laziness or dissipation. He enters life in the glory of his early manhood, with faculties unfolded, strengthened and alert; joyously marching on his way, however steep and hard, to assured success; helpful he to others who can not help themselves; master of his passions; no fanatic of one idea, but giving hospitable welcome to all good thoughts, which ripen in his true and genial nature into virtuous action. Such is the educated youth, such is the champion of stainless honor, armed with weapons of immortal temper, whom Harvard loves to send forth into the world to do heroic work. The young man who would achieve lasting renown must learn to curb his fiery impulses and subdue the wanderings of his impassioned thoughts; and this the studies of the University most readily help him to do. I do not say there is no other way of achieving this result. But this is the shortest and most effective way. Great men conquer great difficulties, and show themselves great in doing so; but they remember what the difficulties were, and strive to put them out of the way of their successors. Washington and Franklin were not university men; but the former recommended, and the latter founded a university. Franklin was not a classical scholar, but he provided the means whereby others should become classical scholars, and wishing to make a present to our library which should signalize his appreciation of good learning, he sent—not poor Richard—but a handsome copy of Virgil. But if severe training be necessary for effective mental action, what room is left for spontaneous impulse, some may ask—what channel for inspiration? For among those who question the ancient methods, we hear a great deal said about inspiration and spontaneity—pardon me the word, I never used it before. Without discipline there is no spontaneous action worth having; no inspiration that deserves to be listened to. St. Paul drew an illustration from the Grecian games; let me ask the advocates of spontaneity what they think of the principle as applied to the boat races in which our young friends have so much distinguished themselves. Are the careful diet, the early hours, the daily testing of vigor and skill, the total abstinence from hurtful drinks and food, the training of the eye, the ear, the hand—are all these spontaneous actions? Does the man who pulls the stroke oar do it by spontaneity? I know not—I never tried it—but I should not like to pull against such a man with all the spontaneity I could muster. The most beggarly ballad singer that earns his daily bread by twanging his harp and singing his poor old songs at cottage doors, has won his skill of hand and voice and style by long and persistent training. The immortal verse of Homer was no careless outpouring of sudden impulse. We may be sure that the unapproachable perfection of his transcendent composition was the result of long and careful cultivation. It is true that he inherited a language formed under the happiest influences of nature, by a race who possessed a manly vigor and an exquisite susceptibility to the beauty of sound and form. The Ionic Greek, which he learned from his mother's lips, was the most wonderful instrument on which poet ever played. For every mood of man's changing mind; for every affection of the heart; for every form of outward nature it possessed that peculiar felicity of expression which places the things described directly before the hearer. And Homer inherited from his birth each gift and grace with which the gods have ever crowned their darlings. His vigilant eye let no object, great or small, escape its lightning glance: his ear drank in the melodies of nature and art; his exquisitely strung nerves vibrated to every breath of heaven, every voice of passion, every stirring impulse of the soul. But he stored his mind with all the knowledge of his age. He traveled over the ancient Grecian world, and with a keenness of observation which no naturalist of modern times has ever surpassed, he noted the phenomena of Nature on the bosom of the stormy sea, on the resounding shore, in the silence of the star-lit night, at the rising of the sun, at the setting of the Pleiades. And when the inspiration came upon him, and his thoughts voluntarily moved harmonious numbers, the thought, and knowledge, and discipline were there; the listening throngs at the Ionian festivals knew that they stood in the presence of the greatest creative intellect—the wisest of men—the favorite of the heavenly powers. From that day to this the law has remained the same. The gods have placed labor before excellence, and the condition is inexorably exacted. The superiority of genius is not only a superiority of natural endowment, but a force of will and a faculty of toil that bring all natural endowments into the highest and the most efficient activity.

The proper objects of a university are twofold; 1, educating young men to the highest efficiency of their intellectual faculties, and to the noblest culture of their moral and religious natures. To accomplish this end, both experience and reason have shown that the study of the classical languages of antiquity—the Greek and Latin—the mathematics and the physical sciences and intellectual philosophy, are the best means. Other sciences and other departments of literature are added, according to time, taste and inclination, for practical utility and literary accomplishment. Modern languages are provided for as the keys to the precious treasures of literature in which the cultivated nations of Europe have embodied their best thoughts. The two great languages of antiquity have been taken as the basis of literary culture, first, because, as languages, as instruments for the expression of thought, they stand in the long line of Indo-European tongues, and in the long succession of centuries, at the highest point of perfection. Speech in itself is one of the grandest and most beautiful objects of study. Taking it in all its relations and forms, we may call it the chief distinction of man. It is one of the divinest miracles of our being. When we speak we set in motion an organism framed with inexpressible skill by the hand of the Almighty Creator. What curious and subtle adaptations have been contrived to make the art of speech not only possible but easy—so easy, and so natural, that we never pause to reflect upon the miracle of the phenomenon. The articulating organs, so exquisitely constructed and adjusted; the elastic air, that serves so many other wonderful purposes in the economy of the universe; the intellect, created as all science shows, in the image of the Divine mind, transmitting its commands from the brain, where it sits enthroned like a god, along the speeding nerves to its servants, the articulating organs; the impulse moving on the wings of the breeze, sweeping through intervening space, knocking at the porches of the ear, and delivering the message—a bodiless thought—to another kindred mind. How common-place, how mysterious, how divine! No wonder that Rhenius, a missionary in the East, in the preface to his "*Tamil Grammar*," exclaims: "To God, the Eternal and Almighty Jehovah, and Author of speech, be glory forever and ever." But these two languages are not only the perfection of the forms of speech; they contain the most admirable compositions in every species of literature which stand in point of time also at the head of that European civilization to which we belong. Nothing can change the past; the position they occupy, the influence they have exercised over the course of thought and the forms of literature are immutable facts. Whatever progress the nations may make, the Greek and Roman writers stand as the venerable teachers of the European world. You can not cut off the fountain head; you can not stop the stream. To the end of time the great classic authors of Greece and Rome will be the models of all that is noble in expression, elegant in style, chastened in taste. Doubtless the ages advance in knowledge and culture as they advance in time. But the twin peaks of Parnassus still rise, and only one poet soars to the side of Homer. The Bema stands silent and solitary in Athens, and no orator has ascended its steps and plucked the crown from the brow of Demosthenes.

The Cephissus and the Ilissus listened to the philosophy of Plato and Aristotle; but no modern Cephissus and Ilissus so haunt the memories of cultivated thinkers as these slender streamlets. He would be a bold man who asserted that any dramatist has surpassed or that more than one has equaled Æschylus and Sophocles. There have been many more populous and wealthy cities than Athens, but only one Athens has illustrated the history of man—there has been but one Athens in the world. Time has not dimmed her ancient glories; her schools still school mankind; her language is the language of letters, of art, of science. There has been but one Acropolis over which the virgin goddess of wisdom kept watch and ward with spear and shield. There has been but one Parthenon, built by the genius of Architecture, and adorned with the unapproachable perfections of Phidian statues; and there it stands in the pathetic beauty of decay, kindling in the blaze of the noonday sun, or softly gleaming under the inexpressible loveliness of the full moon of Attica.

Great moralists have taught the lessons of wisdom and goodness in every generation of men; but only the Son of God rose to diviner strains than Socrates, whose teachings of the obligations of duty, the immortality of the soul, the forgiveness of injuries, the certainty of judgment to come, sanctify the rocky chamber where he held those dialogues recorded by the most beloved of his disciples, and where, when the great discussion ended, and the setting sun was still lighting the hill of Mars and the Acropolis with its unequaled glories, he died a martyr's death because he would not disobey his country's laws.

A liberal education, a university education, aims to train the mind in these high studies, to make it familiar with these inspiring examples, to refine the taste, exercise the judgment, soften the heart, by these humanizing arts. I have dwelt a few moments on this department of university education, partly I suppose, because the studies of my life have been more especially consecrated to its cultivation; but partly also because the utility of these pursuits and their fitness to hold the prominent place which our system assigns them, have been vehemently questioned. The discipline of the exact sciences and their practical usefulness, the importance of cultivating the powers of observation, and guarding against the illusions of the senses, the value of a careful initiation into the philosophy of the mind, and the political sciences, no man in his senses ever denied, and I have no time now to waste on idiots.

I believe the education founded on the studies of which I have spoken, is the best for a young man considered as a rational being; and if best for a young man as a rational being, it is also the best preparation he can have for any special department of life. He will not only be the better lawyer, clergyman, physician, for having had it, but he will be the better citizen, the better merchant, the better banker, the better every thing. The late Colonel Perkins told me that if he were then in active life, and had to choose between two young men for his counting-house, of equal natural abilities, of equal excellence of character, the one having received a college education, with no special preparation for business, the other with a good school education and the most careful training in book-keeping, and the other arts which have a special bearing on commercial pursuits, he should take the college man. The ground of judgment taken by that eminent and very able merchant was that the college man could easily master the details of the business, with the general culture his education had given him, so as to be equal to his rival in that special thing, and that done, he would always be, in other respects, the superior. And I have been told by an eminent professor of natural science, who formerly belonged to a foreign university into which came pupils from the gymnasia, where a classical course was required, and others from the so called real schools, where the studies were exclusively practical and scientific, that invariably the classical men were the best in the study of the natural sciences, for which the preparation of the others, in a superficial view, would be supposed to have best qualified them. The reason was the same as that given by the merchant: the gymnasia furnished a more complete exercise of the intellectual powers, and he who had been subjected to it was better fitted for *any* special department in the university. I think these views are sound and philosophical; and while I do not claim that a university education is essential to professional pursuits, practical business or public life, I would strongly urge it upon every young man looking forward to either of these careers, who can command his time and has the means. Our assemblage of institutions adapt themselves, however, to the various conditions and objects of men. We do not require a young man to pass the undergraduate department in order to enter the scientific or professional schools, because we know that many who will greatly profit by these schools can not spare the time required by the college, yet I have not the slightest doubt that in every one of these cases a previous college course would in after-life prove to be an inestimable blessing. I should be glad to illustrate this topic at greater length, but passing time warns me that I must forbear. Socrates deemed himself happy that he was about to migrate after death to a blessed region where he should meet and converse with the souls of Homer, and Hesiod, and other good and famous men. The scholar now may enjoy the anticipated happiness of Socrates. He may read the very words, glow with the very thoughts, fill his memory with the very images that revolved in the capacious genius of the old Ionian singer, whose undying verse still reproduces the Hellespontine shore, echoes with the multitudinous plashing of the sea, and repeoples with heroic forms the plain of Troy, over whose silent fields the Simoeis and Scamander steal their languid way, as the traveler, Iliad in hand, sweeps along the sparkling waters, with Ida, Gargarus, and the Mysian Olympus in sight while Tenedos, and Imbros, and Samothrace, rich with poetical memories, flash like gems on the bosom of the Ægean deep. An English gentleman—Mr. Calvert—owns the immortal plain, and is reclaiming it with British capital from the exhaustion of centuries of barbaric possession. But the genius of Homer holds it by an older title, inalienable, recognized by the whole educated world; and the scholar who sails its neighboring waters, and treads its shores, is the guest of him who has possessed it by the right of song for more than three thousand years. Is it not something, too, to tread the Bema—that illustrious rock—and recall the majestic words of Demosthenes, which entranced the souls of his countrymen, and kept the arms of Philip and Alexander for twenty years at bay—the very words of matchless grace and resistless force, wherein the master's fiery inspiration flowed? Is it not something to repeat the very phrases in which Plato delivered his divine philosophy to his disciples, while the breezes played among the weird old olive groves, sacred to Minerva, and the silvery waters of the Cephissus went murmuring by, more than two thousand years ago? When Cicero visited Athens, he turned aside at the Peiraic gate and passed up the plain to the shady walks of the academy, that he might refresh his soul with the exalting associations of the spot, even before he beheld the wonders of art that crowned the Acropolis, or conversed with the accomplished men who in that age still crowded the gardens, the schools, the Leschæ, and the porticos. To the scholar of the present day the enjoyment is more exquisite, the delight of such associations more intense.

But I must tear myself away from these classic memories, that recall moments that were eras in the intellectual life—hours, happy hours, too quickly fled.

I have said that the object of a university was partly to educate the young—the picked and chosen youth of the country; but it is also in part the duty of the professors to add to the literature and science of their respective departments. The university that fails to do this, fails in an essential portion of its proper business. For the men of Harvard I proudly and gratefully appeal to the judgment of the world. Natural and mathematical science, law, philosophy, poetry, are daily receiving important accessions from the heads and hands of our professors. Leading works in all the provinces of the intellectual domain might be enumerated produced within the last ten years. But in this presence I forbear. In the other branches of academic duty, the all important question is, does the training of Harvard rear up a race of men, high minded men? Public and private munificence has built and filled yonder library and these learned halls. The same generous spirit has endowed these professorships. Have the objects of all these noble endowments and costly sacrifices been attained? Are all these diligent labors, these watchful cares daily and nightly exercised by the academic body, rewarded by the bright accomplishments and honorable characters of the young men who annually go forth from these ancient halls into the busy world? If not, let the ancient halls crumble to the earth; let yonder noble library be scattered or burned by invading barbarians; let yonder museum, which now contains in its ample spaces an organic world, be leveled brick by brick, and the naturalist who rules there return to the land whose great loss we have thought our exceeding gain in his coming. But no; the halls, libraries, museums, shall stand, and their means of progress and utility shall be indefinitely enlarged. The naturalist shall stay where he is. There is no end to the public and private blessings they confer. Proudly and gratefully I go before the world with these graduates of Harvard—from the noble man who stands at the head of the long catalogue of illustrious living names, to the class that received their diplomas yesterday.

There are some who doubt the wisdom of our system and the fitness of our discipline, but behold the results. I make no boastful comparisons, but wherever I meet a Cambridge man I know that I am in the society of a gentleman. I think I have known the Cambridge student long enough to understand his qualities. I know that he sometimes sports fantastic and paradoxical theories of his own rights, especially as against the faculty; I am aware that he sometimes labors under the most incredible delusions as to the insidious designs of tutors and proctors against his peace and dignity, for I have been a tutor and a victim; but I doubt if the faults of students are as great as those that other bodies of young men, if assembled in equal numbers, would exhibit. I am convinced that they have better safeguards against serious moral dangers than other young men enjoy. Nowhere, I think, is the influence of high character more powerful or pervading. I know of no form of society where, with the greatest inequality of social condition and wealth, such absolute justice is done to merit. Rich and poor, country boys and city boys, candidates well prepared and candidates ill prepared, here come together. In spite of their errors of opinion and conduct, as towards the authorities under which they are placed, in their bearing toward each other, in the honors they award to each other, I firmly believe that no society of men in the world, young or old, are governed by a more absolute sense of perfect and impartial justice. We used to hear in former times of charity scholars. Young men destitute of this world's goods, but rich in hope and aspirations, were above the false pride of refusing to perform services which the more fastidious tone of our day would perhaps call unmanly, to earn thereby money to pay, in whole or in part, the cost of their education. The rich classmates of such a young man never made them feel, by scornful look or haughty manner, or stinging allusion, the sense of inequality. The same scholar who, in common's hall, waited upon his wealthier classmates, or rang the morning bell, or kindled the fire in the recitation room, presided in the evening over one of the literary societies, into which the rich young man felt himself honored to be admitted as a common member. *Haud inexpertus loquor.* This generous principle of scholarly association, making a student's position in the most important respects dependent upon what he *is*, and not upon what he *has*, is a noble characteristic of college life. But the poor scholars are not the only charity scholars. Rich and poor are alike the beneficiaries of the founders and benefactors of the university. In the eye of the law, the college is only a great charity. The teaching of the learned professors, the use of these museums and libraries, the countless benefits of a residence here, are procured for rich and poor alike, from what or by whom? Not from the money paid in term bills, but from the well directed charities of past generations and the present. These precious opportunities, which money can not purchase, are open to the richest as well as the poorest, for half the sum paid for tuition at some of our private schools. The wealthiest scholar is dependent on charity for at least five-sixths of what his education costs, and the poorest only for a trifle more. The difference between the richest and the poorest this year has been but thirty dollars. Every student who has ever graduated here, whether he waited at table, made fires, rang bells, kept monitors' bills, or not, has been a charity student—nothing more.

Under these varied and contrasted influences the general type of character formed here is one in which truth, honor, generous feeling, brotherly kindness, most generally and permanently prevail. We meet it in all the walks of life, in practical affairs, in the professions, in church, in state. It is not often found in its highest development, but when it is, how lovely does it rise before us. Purity, manliness, and ardent youth go well together. The union of these high qualities with the gracefulness of opening life and glowing manhood, is every where a lovely spectacle, which the gods may contemplate with delight. Nowhere is it lovelier or more beloved than among its kindred youth at college. Have you not watched him in his daily walk? Refined in manners, gentle in bearing, quiet in speech, and never uttering a coarse word or a doubtful jest, he moves like the angel of Milton, severe in youthful beauty. He is devout and religious without ostentation, but without the dread of showing it on all fitting occasions. The harmony of his life is felt by the lightest of his companions. Do his fellow students doubt his virtue, sneer at his purity, scorn his gentleness? He who thinks so greatly misjudges their generous natures. In his calm and saintly presence vice shrinks abashed, and tries to hide her ugliness; loose phrase and suggestive song die away upon shamed and silenced lips. His speech is precious as gold; his opinion sways like the sentence of a sage; his father's pride, his mother's joy, the idol of his sister's heart—is this being a dream of fancy? God forbid. I seem to see him now, standing in bodily presence before me. Alas! he sleeps in yonder city of the dead. His memory, crowned with amaranthine virtues, is the viewless presence in which he lives among us.

Gentlemen, it is high time for me to close. God grant that we may all work in harmony for the prosperity of the common mother of our minds. God grant that these young men, who come up year by year, may under the influences of the place be strengthened for every good word and work. If I may be thought, hereafter, to have wrought in some humble measure toward the consummation of my hopes, that will be renown enough.

VI. HARVARD COLLEGE.[*]

1636—1654.

In 1636, six years after the first settlement of Boston, the General Court, or Legislature, of the colony of Massachusetts Bay, which met at Boston on the 8th of September, and continued in session until the 28th of October, passed an act[†] appropriating £400 toward the establishment of a school, or college. The sum thus set apart was more than the whole tax levied on the colony, at that time, in a single year. The civilized portion of the population did not exceed five thousand persons of all ages, and these were scattered thinly through ten or twelve small villages, in a country whose resources was not yet developed, and of which so little was known, that it might be said to be unexplored. But in all these villages, the magistrates and ministers were educated men—many of them were eminent graduates of the university of Cambridge, and not a few of them had taught in the public schools of England. These men gave direction to the educational policy of the colony, which resulted in the establishment of public schools and colleges, so that "learning was not buried in the graves of the fathers in church and commonwealth."[‡]

In 1637, Governor Winthrop, Deputy-Governor Dudley, Counselors Humphrey, Harlaskenden, and Houghton, and the Ministers Cotton, Wilson, Davenport, Wells, Shepard, and Peters, were appointed by the General Court "to take order for a college," which, in the same year, was located in Newtown, and which name was changed, in 1638, to Cambridge, in remembrance of the place where so many of the leading colonists had received their education.

In 1638, the Rev. John Harvard, who came to Charlestown in 1637, gave by his will the sum of £779 17*s.* 2*d.* in money, and more than three hundred volumes of books. It is to be lamented that so very little is known of a man whose name is deservedly commemorated in that of the college, to which his bequest was so timely and so bountiful an aid. He had been but a few months in the colony, though long enough to acquire the respect of his associates, and to excite in himself the strongest sympathy with the effort to extend the means of education. He was a scholar, as well as an orthodox divine, and a practical Christian; and it is a striking characteristic of the age, and of the individual, that a man of such character, and in such circumstances, should have been found in his position. The sum above named was but half of his property, and must be esteemed equal to six or seven times the same nominal amount at the present day—sufficient, certainly, to secure to its possessor the comforts of life, as they would then have been esteemed. And yet he leaves his native country, a voluntary exile, and resorts to the feeble settlement of a scanty colony, in an unknown wild, and preaches the gospel to the little flock that can be found there to attend his ministrations. If there be such a thing as strength in the human character, or elevation of purpose, and superiority to worldly advantages, in the human heart, surely they were exhibited by John Harvard.*

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[*] This sketch will follow substantially Eliot's "*History of Harvard College.*"

[†] "The Court agreed to give £400 toward a school or college, whereof £200 to be paid next year, and £200 when the work is finished, and the next Court to appoint where and what building." For List of Legislative Grants, see Appendix, p. 139.

[‡] "The ends for which our fathers did chiefly erect a college in New England, were that so scholars might be there educated for the service of Christ and his churches, in the work of the ministry, and that they might be seasoned in their tender years with such principles as brought their blessed progenitors into this wilderness. There is no one thing of greater concernment to these churches, in present and aftertimes, than the prosperity of that society. They can not subsist without a college"—*Dr. Increase Mather.*

The first class was formed in 1638, under the care of Mr. Nathaniel Eaton—but whether as a preparatory or collegiate class does not appear. It is certain, however, that Mr. Eaton enjoys the bad preeminence of being mentioned as one of the earliest schoolmasters in New England, who disgraced his calling as a teacher of "the school at Cambridge," by bad temper, unjustifiable severities, and short commons.

In 1640 the General Court granted to the college the income of the Charlestown ferry; and in the same year, the Rev. Henry Dunster arrived from England; and so eminently qualified was he by learning, ability and virtues for the office of president, that he was placed in it at once by a sort of acclamation and general consent. He was inducted into the office on the 27th of August, 1640. Under his administration, and principally by his efforts, a course of study was prescribed, a code of laws for the government of the students was framed, the ceremonial of the annual commencement and conferring of degrees was instituted, and a charter, the first corporation created by the General Court, and which still remain as the fundamental law of the oldest literary institution in this country, was obtained. Probably the college never had a more able, faithful, and devoted officer than President Dunster, and yet all his services to the cause of good learning could not protect him from being indicted by the grand jury for disturbing the ordinance of infant baptism by preaching *antipedobaptism* in the church of Cambridge, of which he was pastor. He was tried, convicted, and sentenced to receive admonition on Lecture Day,* and to be laid under bonds for good behavior; and so strong was the pressure against him, that on the 24th of October, 1654, he resigned the presidency, and retired to Scituate, in the jurisdiction of Plymouth Colony, where he died in the following year. In compliance with his dying request, his body was brought back to Cambridge, that it might rest near the college which he had loved and served so faithfully.

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* For "Memoir of Harvard," and Mr. Everett's address on erecting a monument to his memory in 1838, see Barnard's "*American Journal of Education*," Vol. V., p. 521–534.

Some of the provisions in the laws for the government of the college, drawn up by President Dunster, presents a vivid picture of the manners of that age. "They [the students] shall honor, as their parents, the magistrates, elders, tutors, and all who are older than themselves, *as reason requires*, being silent in their presence, except when asked a question, not contradicting, but showing all those marks of honor and reverence which are in praiseworthy use, saluting them with a bow, standing uncovered," &c. The use of their mother tongue was prohibited, and perhaps so much might be effected by law even now; but it would be entirely unsafe to predict what would be the substitute for it in familiar use. Latin, surely, would scarcely be thought of.

The mode of discipline authorized by the "seventeenth rule" is a recorded proof of what otherwise might have rested on obscure tradition only, that our fathers, in common with their contemporaries generally, were not well informed upon one characteristic of human nature, at least. The degrading and brutalizing effect of stripes has been so often, so eloquently, and so learnedly demonstrated in modern times, and has been shown, besides, by the experience of so many ages, that it has become a matter of especial wonder that the generations which grew up under such a liability did not relapse into barbarism, rather than make any further progress toward civilization. We, of the nineteenth century, sympathize deeply, and even painfully, with the feelings, wounded and indignant as they must have been, of a future baronet, a governor, three presidents of the college, and thirty-seven ministers of the gospel, to say nothing of the less distinguished individuals, all of whom were exposed, for the four years of their college life, to the cruelty permitted in the following law, sanctioned by Dunster. "If any student shall violate the law of God and of this college, either from perverseness, or from gross negligence, after he shall have been twice admonished, *he may be whipped*, if not an adult; but if an adult, his cause shall be laid before the overseers, that notice may be publicly taken of him according to his deserts. In case of graver offences, however, let no one expect such gradual proceedings, or that an admonition must necessarily be repeated in relation to the same law."

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* Lecture Day—Rev. Dr. Cotton commenced the practice of a public discourse on Thursday of each week, which was attended by the devout from all the villages about Boston, and has been continued to the present time.

The enforcement of the "twelfth rule" would, in these days, certainly afford frequent occasion for both the admonition and the rod, and one can not but suspect that, even then, the police of the college must have had some calls for activity, both in word and in deed. "No scholar shall buy, sell, or exchange any thing of the value of sixpence, without the approbation of his parent, guardian, or tutor. But if he shall do so, he shall be fined by the president, according to the measure of his offence."

The first commencement at Harvard College, was holden on the 9th of October, 1642, when nine candidates took the degree of Bachelor of Arts.* "They were young men of good hope," remarks Gov. Winthrop, "and performed their parts so as to give good proof of their proficiency in the tongues and arts. Most of the members of the General Court were present, and for the encouragement of the students, dined at the "ordinary commons." Thus commenced flowing out that current of cultivated intellect, which has widened and deepened into more than a mighty stream, and exerting a powerful influence over the social life and public sentiment of each successive generation for more than two centuries.

In 1642 the General Court, held at Boston, passed the following "*Act establishing the Overseers of Harvard College:*"—

> Whereas, through the good hand of God upon us, there is a College founded in Cambridge, in the county of Middlesex, called HARVARD COLLEGE, for the encouragement whereof this Court has given the sum of four hundred pounds, and also the revenue of the ferry betwixt Charlestown and Boston, and that the well ordering and managing of the said College is of great concernment;
>
> It is therefore ordered by this Court, and the authority thereof, that the Governor and Deputy Governor for the time being, and all the magistrates of this jurisdiction, together with the teaching elders of the six next adjoining towns, viz., Cambridge, Watertown, Charlestown, Boston, Roxbury, and Dorchester, and the President of the said College for the time being, shall, from time to time, have full power and authority to make and establish all such orders, statutes, and constitutions, as they shall see necessary for the instituting, guiding, and furthering of the said College, and the several members thereof, from time to time, in piety, morality, and learning; as also to dispose, order, and manage, to the use and behoof of the said College, and the members thereof, all gifts, legacies, bequeaths, revenues, lands, and donations, as either have been, are, or shall be, conferred, bestowed, or any ways shall fall, or come, to the said College.

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* See APPENDIX VI. for the Statutes, &c.—reprinted entire from Quincy's "*History of Harvard College.*"

And whereas it may come to pass, that many of the said magistrates and said elders may be absent, or otherwise employed about other weighty affairs, when the said College may need their present help and counsel,—It is therefore ordered, that the greater number of said magistrates and elders, which shall be present, with the President, shall have the power of the whole. Provided, that if any constitution, order, or orders, by them made, shall be found hurtful to the said College, or the members thereof, or to the weal-public, then, upon appeal of the party or parties grieved, unto the company of Overseers, first mentioned, they shall repeal the said order, or orders, if they shall see cause, at their next meeting, or stand accountable thereof to the next General Court.

In 1643 a vote was passed by the governors of the college to adopt a common seal, in a form which has the qualities of simplicity and appropriate beauty. Three books were spread open on a shield, and upon them was inscribed the word VERITAS, expressing in the most emphatic manner, the object of the institution, and indicating the most prominent means by which it was to be attained. It does not appear that this device was ever engraved, or used; though it has the merit of being more comprehensive, and more simple, than the first seal which was actually used, and which had the motto "IN CHRISTI GLORIAM." This, as it would be ordinarily understood, conveys the erroneous impression that the institution was designed to be, or that it actually was, a theological school; and such an idea is still more directly countenanced by the motto subsequently introduced, and which is still in use, CHRISTO ET ECCLESIÆ. VERITAS includes every species of truth, and is therefore more strictly in unison with the known plan and character of the college. The simplicity of the device, characteristic of that age, recommends itself to the best taste of all ages.

In 1642 and 1643 many large donations of money, types, books, &c., were made by persons in England, and in the colony. Some of the money which came from abroad was taken by the General Court, and interest was allowed for it, at the rate of more than nine per cent. This was continued for many years, and then discontinued for some time; till at length, in 1713, the original sum was repaid, with interest at six per cent. from 1685.

In 1650 a charter was granted by the General Court, by which the President, five Fellows, and a Treasurer were made a "Corporation," with power of perpetual succession, and of doing many, nay almost all necessary acts "for the advancement and education of youth, in all manner of good literature, arts and sciences."

The Charter of the President and Fellows of Harvard College, under the Seal of the Colony of Massachusetts Bay, and bearing date, May 31*st, A. D.* 1650.

Whereas, through the good hand of God, many well-devoted persons have been, and daily are, moved, and stirred up, to give and bestow, sundry gifts, legacies, lands, and revenues, for the advancement of all good literature, arts, and sciences, in Harvard College, in Cambridge in the county of Middlesex, and to the maintenance of the President and Fellows, and for all accommodations of buildings, and all other necessary provisions, that may conduce to the education of the English and Indian youth of this country, in knowledge and godliness.

It is therefore ordered and enacted by this Court, and the authority thereof, that for the furthering of so good a work, and for the purposes aforesaid, from henceforth, that the said College, in Cambridge in Middlesex, in New England, shall be a Corporation, consisting of seven persons, to wit: a President, five Fellows, and a Treasurer or Bursar; and that Henry Dunster shall be the first President; Samuel Mather, Samuel Danforth, Masters of Art, Jonathan Mitchell, Comfort Starr, and Samuel Eaton, Bachelors of Art, shall be the five Fellows; and Thomas Danforth to be present Treasurer, all of them being inhabitants in the Bay, and shall be the first seven persons of which the said Corporation shall consist; and that the said seven persons, or the greater number of them, procuring the presence of the Overseers of the College, and by their counsel and consent, shall have power, and are hereby authorized, at any time, or times, to elect a new President, Fellows, or Treasurer, so oft, and from time to time, as any of the said persons shall die, or be removed; which said President and Fellows, for the time being, shall for ever hereafter, in name and fact, be one body politic and corporate in law, to all intents and purposes; and shall have perpetual succession; and shall be called by the name of President and Fellows of Harvard College, and shall, from time to time, be eligible as aforesaid, and by that name they, and their successors, shall and may purchase and acquire to themselves, or take and receive upon free gift and donation, any lands, tenements, or hereditaments, within this jurisdiction of the Massachusetts, not exceeding five hundred pounds per annum, and any goods and sums of money whatsoever, to the use and behoof of the said President, Fellows, and scholars of the said College; and also may sue and plead, or be sued and impleaded by the name aforesaid, in all Courts and places of judicature, within the jurisdiction aforesaid.

And that the said President, with any three of the Fellows, shall have power, and are hereby authorized, when they shall think fit, to make and appoint a common seal for the use of the said Corporation. And the President and Fellows, or major part of them, from time to time, may meet and choose such officers and servants for the College, and make such allowance to them, and them also to remove, and after death, or removal, to choose such others, and to make, from time to time, such orders and by-laws, for the better ordering, and carrying on the work of the College, as they shall think fit; provided, the said orders be allowed by the Overseers. And also, that the President and Fellows, or major part of them with the Treasurer, shall have power to make conclusive bargains for lands and tenements, to be purchased by the said Corporation, for valuable consideration.

And for the better ordering of the government of the said College and Corporation, Be it enacted by the authority aforesaid, that the President, and three more of the Fellows, shall and may, from time to time, upon due warning or notice given by the President to the rest, hold a meeting, for the debating and concluding of affairs concerning the profits and revenues of any lands, and disposing of their goods (provided that all the said disposings be according to the will of the donors); and for direction in all emergent occasions; execution of all orders and by-laws; and for the procuring of a general meeting of all the Overseers and Society, in great and difficult cases: and in case of non-agreement; in all which cases aforesaid, the conclusion shall be made by the major part, the said President having a casting voice, the Overseers consenting thereunto; and that all the aforesaid transactions shall tend to and for the use and behoof of the President, Fellows, scholars, and officers of the said College, and for all accommodations of buildings, books, and all other necessary provisions and furnitures, as may be for the advancement and education of youth, in all manner of good literature, arts, and sciences. And further, be it ordered by this Court, and the authority thereof, that all the lands, tenements, and hereditaments, houses, or revenues, within this jurisdiction, to the aforesaid President or College appertaining, not exceeding the value of five hundred pounds per annum, shall, from henceforth, be freed from all civil impositions, taxes, and rates; all goods to the said Corporation, or to any scholars thereof appertaining, shall be exempted from all manner of toll, customs, and exercise whatsoever. And that the said President, Fellows, and scholars, together with the servants, and other necessary officers to the said President, or

College appertaining, not exceeding ten, viz., three to the President, and seven to the College belonging, shall be exempted from all personal civil offices, military exercises, or services, watchings, and wardings; and such of their estates, not exceeding one hundred pounds a man, shall be free from all country taxes or rates whatsoever, and no other.

In witness whereof, the Court hath caused the seal of the colony to be hereunto affixed. Dated the one and thirtieth day of the third month, called May, anno 1650.

[L. S.] THOMAS DUDLEY, *Governor.**

1654—1672.

After the resignation of President Dunster, John Amos Commenius, of Moravia, received, through the younger Winthrop, overtures to accept the office,† but he was induced to bestow his educational labors in Sweden and Transylvania.

On the 2d of November, 1654, the Rev. Charles Chauncy, then on his way from Scituate, in Plymouth County, where he had been a minister for twelve years, to England, with a view of being reinstated in his former parish of Ware, was chosen President. He was born in Hertfordshire in 1589. Was educated at Westminster School and in Trinity College, Cambridge, in which he was afterwards Professor of Hebrew and of Greek, until he was settled over a parish in Ware. Here he became involved in the ecclesiastical troubles "*for opposing the making of a rail about the communion table,*" for which he was finally silenced and suspended by Archbishop Laud, and in consequence betook himself to the colony of Plymouth in 1638. He was sixty-four years old when he took charge of the college, and his presidency was prolonged till death, February 19, 1672, in his eighty-second year. He was an indefatigable student, rising every morning at four o'clock the year round. It was his practice to devote between three and four hours every day to private devotion, and sometimes he spent whole nights in prayer. The church at Cambridge, of which he was pastor, after he had been with them a year or two, kept an entire day of *thanksgiving* to God for the mercy of enjoying such a preacher. Dr. Cotton Mather states: "The Fellows of the college once leading this venerable old man to preach a sermon on a winter day, they, out of affection to him, to discourage him from so difficult an undertaking, told him, 'Sir, you'll certainly die in the pulpit;' but he, laying hold on what they said, as if they had offered the greatest encouragement in the world, pressed the more vigorously through the snow-drift, and said, 'How glad should I be, if what you say might prove true.'"

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* A copy of the original, engrossed on parchment, under the signature of Governor Dudley, with the colony seal appendant, is in the custody of the President and Fellows of Harvard College.

† Dr. Cotton Mather, in "*Magnalia,*" folio, London, 1702, Book IV., p. 128, after stating Dunster's resignation, says:—

"That brave Old Man, *Johannes Amos* COMMENIUS, the *Fame* of whose Worth hath been Trumpetted as far as more than three Languages (whereof every one is Endebted unto his *Janua*) could carry it was indeed agreed withall, by our Mr. *Winthrop* in his Travels through the *Low Countries*, to come over into *New-England*, and Illuminate this Colledge and *Country*, in the Quality of a *President*: But the Solicitations of the *Swedish* Ambassador, diverting him another way, that Incomparable *Moravian* became not an American."

Commenius was invited to visit England in 1641, to organize a system of public instruction for the Commonwealth. He visited London in that year, but the disturbances in Ireland so hindered his plans, that he abandoned that field and accepted a similar task in Sweden, where he had the countenance of Chancellor Oxenstiern and the aid of the Swedish Government. Had Commenius made either Old or New England his permanent residence, it is not too much to suppose that his publications and earnest personal efforts would have introduced the same educational reform which he inaugurated in Germany. See Memoir in Barnard's "*American Journal of Education,*" Vol. V., p. 257–298.

During the term of office of "this venerable old man" the only Indian, who ever passed through the four years of college life, took his degree. Several were induced to attempt the civilizing process of a learned education; and at one time, the "Society for Propagating the Gospel in New England and the Parts Adjacent," erected a hall for their accommodation, at a cost of between £300 and £400. The effort was soon given up, however, as the Indian constitution was found incompatible with those habits which are requisite for literary attainments. Even Caleb Cheeshahteaumuck, as this solitary Indian graduate was euphoniously called, soon died of consumption. The building erected for the special accommodation of the natives was, therefore, appropriated to other purposes, and for some time was used as a printing office, which gained great renown in its day.

About one half of the graduates under President Chauncy became ministers of the gospel, and several others held posts of distinction in civil life. Two were Chief Justices of the Colony; one was afterwards Chief Justice of the colony of New York, and successively Governor of Massachusetts and of New Hampshire; and three became presidents of colleges, viz: two of Harvard, and one of Yale.

The donations to the college, at this period, were numerous and interesting;* indicating, in various ways, the state of the colony in respect to its resources, the affectionate regard of the community, and the liberality of many persons in England, as well as here, toward this school in the wilderness. Two of the most considerable, which have remained available to the present day, are the bequest of Edward Hopkins, of £500,† and the annuity of William Pennoyer, which, at the time, was £34 per annum, and is now about £50. Both of these were for the benefit of the indigent; the former to be used for educating boys at the grammar school of the town of Cambridge, as well as young men at the college, and the latter for this purpose only.

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* See APPENDIX—Donations, 1654 to 1672.

† See Barnard's "*American Journal of Education*," Vol. IV., 669.

During the latter part of President Chauncy's administration, both the College and the Colony were involved in pecuniary embarrassments. The buildings of the seminary were "ruinous and almost irreparable," and "the number of scholars short of what they had been in former days." All its efficient funds did not amount to one thousand pounds, and without a new building its situation was desperate. The General Court could, or would do nothing. In this emergency, the town of Portsmouth, in New Hampshire, in an address to the General Court in 1669, after expressing their thankfulness for the protection extended to them by Massachusetts, and saying, "that, although they had articled with them for exemption from taxes, yet they had never articled with God and their own consciences for exemption from gratitude," which "while they were studying how to demonstrate, the loud groans of the sinking college came to their ears; and hoping that their example might provoke the rest of the country to an holy emulation in so good a work, and the General Court itself vigorously to act, for the diverting the omen of calamity, which its destruction would be to New England," declare, that a voluntary collection had been made among their inhabitants, which authorized the town to pledge the payment of "sixty pounds sterling a year for seven years ensuing; to be improved by the Overseers of the College for the advancement of good literature there."

This noble example was not lost on Massachusetts. Efficient measures were immediately adopted for raising subscriptions in the Colony, and an agent was despatched to England to solicit aid from its friends there, with letters and an urgent address to them from the overseers. These exertions produced, in the course of the ensuing year, subscriptions for more than two thousand six hundred pounds. Under this encouragement, in 1672, authority was given for the commencement of a new edifice. Subscriptions, however, were more easily made, than collected. Great delays and delinquencies occurred. The General Court were compelled to interfere; and, after efforts for five or six years, first by urging, then by threatening, and at last, by actually authorizing the delinquent subscriptions to be collected by distress, they finally succeeded in completing the erection of a new college, in 1682, ten years after it had been commenced.

1672—1684.

President Chauncy was succeeded in office by Leonard Hoar, who belonged to the medical as well as to the clerical profession. He was educated at Harvard, but returned to England to become minister at Wanstead, in Essex. He was inducted into the presidency in July, 1672, and resigned in March, 1675, after a troubled administration—both with the corporation and the students—the latter, according to Cotton Mather, used to "turn cudweeds and travestic whatever he did and said, with a design to make him odious," a design in which they succeeded much to the discredit of the Puritan youths. The General Court became early mixed up "in the motions and debates," and a second year had not passed, before the General Court summoned into their presence the corporation, overseers, president, and students; and, after a full hearing, notwithstanding that Dr. Hoar, in consideration of the poverty of the students, voluntarily relinquished fifty pounds of his annual salary, the Court passed this most extraordinary vote; "That, if the college be found in the same languishing condition at the next session, the president is concluded to be dismissed without further hearing." After this decisive encouragement to malcontents, it was not difficult to anticipate the result. The college continued to languish, and Dr. Hoar resigned his office in the March ensuing.

The Rev. Urian Oakes, the minister of Cambridge, was his successor, as president *pro tempore*, retaining his position as pastor of the church. He, too, was born in England, but, coming over in childhood, he was educated at Harvard College, and then went to England, where he was regularly settled; and, having returned to this country, with so many others of the non-conformists, he became, in the first place, minister of Cambridge, and then president of the college. He officiated, for five years, as a merely temporary occupant of the chair, and was not formally installed till February, 1680. He is believed to have countenanced those who expressed their dissatisfaction with his predecessor; and he certainly resigned his seat in the Corporation within a year after Hoar's appointment. The most reasonable, as well as the most charitable, construction of his conduct is, that the complaints against the late president were not without some just foundation; for Oakes has left behind him the reputation of having been "a man of bright parts, extensive learning, and exalted piety"—a reputation clearly inconsistent with any factious conduct, or personal jealousy. He died in July, 1681, and was succeeded by his classmate, John Rogers, a graduate of 1649.

This gentleman was the son of the Rev. Nathaniel Rogers, of Ipswich; and had applied himself first to the study of theology, and afterwards to that of medicine. He continued in office for two years only, highly esteemed for his abilities and acquisitions, and greatly loved for the amiableness of his temper. He was the first layman who held the office of president of the college.

(To be continued.)

GRANTS AND DONATIONS

TO

HARVARD COLLEGE.

TABLE I.

GRANTS BY THE LEGISLATURE OF MASSACHUSETTS TO HARVARD COLLEGE, FROM ITS FOUNDATION TO THE PRESENT TIME. FROM THE STATE RECORDS.

Date.		£ Sterling.			£ Lawful.		
1636	Toward a school or College,	400	0	0			
1639	Cambridge and Watertown rates, £30 12*s.* and £20,	50	12	0			
1640	Ferry between Boston and Charlestown,						
1646	To President Dunster, to be paid in grain or rates,	100	0	0			
1650	The Charter exempted the College from taxation on real property to the value of £500 sterling per an.						
1653	Two thousand acres of land.*						
1654	£100 per annum, for seven years,				700	0	0
1657	Five hundred acres of land granted to President.						
1666	To the President,				20	0	0
1672	£150 per annum to the President for three years,				450	0	0
1675	£100 per annum to the President for seven years,				700	0	0
1682	£100 per annum to the President for ten years,				1000	0	0
	"Merriconeag in Casco Bay, with 1000 acres adjacent," granted to President and Fellows.†						
1692	To the President,				100	0	0
1694	Do.				150	0	0
1695	Do. £50 per annum for six years,				300	0	0
1707	Do. £60 " " " " "				360	0	0
1708	Do. £150 " " " three "				450	0	0
1709	Do. for repairing his house,				12	1	2
1711	Do.				180	0	0
1712	Do.				180	0	0
1713	Do. £190 at 20½ per cent. discount from sterling,	133	19	0			
1715	Do. 190 at 33⅓ " " "	126	13	4			
1716	Do. 190 at 40 " " "	114	0	0			
1717	Do. 180 at 40 " " "	108	0	0			
1718	Do. 180 at 45 " " "	99	0	0			
	For erecting Massachusetts Hall £1500 at 45 per cent. discount from sterling,	825	0	0			
1719	To the President £180 at 50 per cent. discount from sterling,	90	0	0			
	For the new building, £2000 at 50 per cent. discount from sterling,	1000	0	0			
	Two hundred and fifty acres of land in the town of Lunenburg, sold for £120 at 50 per cent.,	60	0	0			
1720	To the President, £400 at 50 per cent. discount,	200	0	0			
1722	To the President, £150 at 57 " "	64	10	0			
1723	To the President, £150 at 60 " "	60	0	0			
1725	To the President, £220 at 64 " "	79	4	0			
1726	To the President, £360 at 64 " "	129	12	0			
	For President's House, £1000 at 64 per cent. discount,	360	0	0			
1727	To the President, £360 per annum for eight years is £2880, at 64 per cent. discount,	1036	16	0			
1735	To Prof. Wigglesworth, £50 at 78 per cent. discount,	11	0	0			
1736	To the President, £120 at 76 per cent. discount,	28	16	0			
	To Prof. Wigglesworth, £16 13*s.* 4*d.* at 76 pr ct. disc.,	4	0	0			
1737	To the President, £200 at 76 per cent. discount,	48	0	0			
1738	To the President, £300 at 79 per cent. discount,	63	0	0			
	Amount carried forward,	5192	02	4	4602	1	2

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* Never obtained. † This grant was defeated by adverse claims

Date.		£ Sterling.			£ Lawful.		
	Amount brought forward,	5192	02	4	4603	1	2
	To Prof. Wigglesworth, £16 13s. 4d. at 79 per ct. disc.,	3	10	0			
1741	To the President, £150 at 79 per cent. discount,	31	10	0			
	To Prof. Wigglesworth, £30 at 79 per cent. disc.,	6	6	0			
1743	To the President, £200 at 79 per cent. discount,	42	0	0			
	To Prof. Wigglesworth, £25 at 79 per cent. discount,	5	5	0			
1746	To the President, £240 at 83 per cent. discount,	40	16	0			
	To Prof. Wigglesworth, £25 at 83 per cent. discount,	4	5	0			
1747	To the President, £300 at 84 per cent. discount,	48	0	0			
	To Prof. Wigglesworth, £75 at 84 per cent. discount,	12	0	0			
1748	To the President, £350 at 85 per cent. discount,	52	10	0			
	To Prof. Wigglesworth, £125 at 85 per cent. discount,	18	15	0			
1750	To the President, £336 13s. 4d. at 90 " "	33	13	4			
	To Prof. Wigglesworth, £200 at 90 " "	20	0	0			
	To Prof. Winthrop, £50 at 90 per cent. discount,	5	0	0			
1752	To the President, £250 at 90 per cent. discount,	25	0	0			
1753	To Prof. Wigglesworth, £100 at 90 per cent. discount,	10	0	0			
	To Prof. Winthrop, £60 at 90 per cent. discount,	6	0	0			
	To the President,				*480	0	0
	To Prof. Wigglesworth,				190	0	0
	To Prof. Winthrop,				150	0	0
	To Rabbi Judah Monis, instructor in Hebrew,				20	0	0
1755	To the President, £250 per annum, for six years,				200	0	0
	To Prof. Wigglesworth,				200	0	0
	To Prof. Winthrop,				1500	0	0
	To R. Monis,				40	0	0
1757	To Prof. Wigglesworth, £100 for four years,				400	0	0
	To Prof. Winthrop, £90 per annum, for four years,				360	0	0
	To R. Monis,				18	0	0
1758	To R. Monis,				20	0	0
1760	To R. Monis,				20	0	0
1761	To the President,				230	0	0
	To Prof. Wigglesworth,				90	0	0
	To Prof. Winthrop,				80	0	0
1762	To the President,				250	0	0
	To Prof. Wigglesworth,				100	0	0
	To Prof. Winthrop,				90	0	0
	Toward erection of a new building (Hollis Hall,)				2000	0	0
	For materials for the same,				500	0	0
	One sixty-fourth part of twelve townships in Maine,						
1763	To the President,				250	0	0
	To Prof. Wigglesworth,				100	0	0
	To Prof. Winthrop,				90	0	0
	To Prof. Sewall,				30	0	0
	Toward new building,				1783	0	0
	For defraying arrearages on the same,				580	7	2
1764	To the President,				250	0	0
	To Prof. Wigglesworth,				100	0	0
	To Prof. Winthrop,				100	0	0
	To Prof. Sewall,				40	0	0
	To Andrew Eliot, butler,				75	10	6
	For a "water engine,"				100	0	0
	To students for losses by the burning of Harvard Hall,				116	17	2
	To others belonging to the College, sufferers by fire,				267	4	0
	Toward rebuilding Harvard Hall,				2000	0	0
1765	To the President,				250	0	0
	To Prof. Wigglesworth,				100	0	0
	To Prof. Winthrop,				100	0	0
	To Prof. Sewall,				40	0	0
	Toward rebuilding Harvard Hall,				1000	0	0
1766	To the President,				200	0	0
	To Prof. Wigglesworth,				50	0	0
	To Prof. Winthrop,				100	0	0
	For rebuilding Harvard Hall,				1112	18	7½
1767	To the President, £200 per annum, for seven years,				1400	0	0
	Amount carried forward,	5556	12	8	21,725	18	7½

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* At this period, the currency was changing from paper to specie; and although it may not have been completed by this year, yet, as there are no means of ascertaining the exact difference, the nominal amount is allowed.

Date.		£ Sterling.	£ Lawful.
	Amount brought forward,	5556 12 8	21,725 18 7½
	To Prof. Wigglesworth, £100 per annum, for nine years, excepting the year 1772, when £80 only were allowed him,		880 0 0
	To Prof. Winthrop, £100 per annum, for nine years,		900 0 0
1768	To Prof. Sewall,		20 0 0
1769	To Prof. Sewall,		80 0 0
1770	To Prof. Sewall, £40 per annum, for six years,		240 0 0
1771	Four eighty-fourth parts of towns in Maine,		
	Three sixty-fourth parts of other towns in Maine,		
1775	To the President,		200 0 0
1777	To the President, £242 4*s.* 5*d.* which, at the average rate of depreciation for that year,* was worth about		100 0 0
	To Prof. Wigglesworth, £189 17*s.* 8*d.* worth about		86 0 0
	To Prof. Winthrop, £180, worth about		81 16 0
	To Prof. Sewall, £100, worth about		45 9 0
1778	To the President, £400, which in that year was worth about		67 0 0
	To Prof. Wigglesworth, £200, worth about		84 0 0
	To Prof. Winthrop, £180, worth about		80 0 0
	To Prof. Sewall, £100, worth about		17 0 0
1779	To the President, £1000, of which the average value in that year was about		67 0 0
	To Prof. Wigglesworth, £500, worth about		84 0 0
	To Prof. Sewall, £290, worth about		19 6 4
	To Prof. Winthrop, £500, worth about		84 0 0
1780	To the President, £7497 10*s.* which, at 40 for one, is		187 6 3
	To Prof. Wigglesworth, £3500, which, at forty for one, is worth		87 10 0
	To Prof. Winthrop, £800, which, at forty for one, is worth		20 0 0
	To Prof. Sewall, £2080, which, at forty for one, is worth		52 0 0
1781	To Prof. Williams, (in specie,)		175 0 0
	To Prof. Wigglesworth, (in specie,)		150 0 0
	To Prof. Sewall, (in specie,)		47 19 0
1783	To the President,		261 13 4
	To the Professors, £105 each,		315 0 0
1784	To the President,		232 10 0
	To Prof. Wigglesworth,		233 7 8
1786	To the President,		483 6 8
	To Prof. Wigglesworth, and Prof. Pearson, £241 13*s.* 4*d.* each,		483 6 8
		5556 12 8	27,840 9 6¼
	These sums are respectively equal to	$24,696.14	$91,101.59
	Amounting to		$115,797.73⅓
1814	Ten sixteenths of bank tax, $10,000 a year for ten years,		$100,000.00
	Total,		$215,797.73⅓

Besides the above grants of money and lands, a lottery was authorized, in 1765, to raise £3,200 "for the new building," probably Harvard Hall.

In 1785 £200 per annum were ordered to be paid by Charles River Bridge Corporation, as a compensation for the ferry which had been granted to the College in 1640. In 1792, the same sum was taxed upon West Boston Bridge Corporation. In 1794, a lottery was granted to raise £800 for a new building, and in 1806 another to raise $30,000 for a similar purpose. In 1809, a township of land in Maine was given to the Massachusetts Agricultural Society for the Professorship of Natural History.

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* See Felt's History of Massachusetts Currency, pp. 186 and 196.

TABLE II.

DONATIONS, CONSISTING PRINCIPALLY OF SUMS OF MONEY, AND ARTICLES ESTIMATED IN MONEY, GIVEN BY INDIVIDUALS TO HARVARD COLLEGE.

Date.		£ Sterling. Mass. Currency.		
1638	Rev. JOHN HARVARD,[*]	779	17	2
1639	Mr. Joseph Glover gave a "font of printing letters."[†]			
1642	The Honorable Magistrates and Reverend Elders books valued at	200	0	0
	Mr. Henry Pool,	10	0	0
	Mr. Theophilus Eaton,	40	0	0
	Mr. Richard Russell,	9	0	0
	Mr. Edward Jackson,	10	0	0
	Mr. Wory,	4	0	0
	Mr. Parish, merchant,	3	0	0
	Some gentlemen of Amsterdam gave £49, "*and something more*," toward furnishing a printing-press with letters,	49	0	0
	Mr. William Hibbons, Mr. Thomas Welles, Mr. Hugh Peters, } Procured from divers gentlemen and merchants in England, for books for the library,	150	0	0
	Mr. Holbrook, schoolmaster at Essex, England,	22	0	0
	A person in England, unknown,	2	10	0
	Rev. Mr. Greenhill, minister of God's word at Stepney,	7	0	0
	Mr. George Glover,	2	0	0
	Mrs. Glover,	10	0	0
	Mr. Bridges, Mr. Greenhill, Mr. Glover, } Utensils to the value of	20	0	0
	A gentleman not willing his name should be known,	50	0	0
	Mr. Willis, merchant, of Boston,	7	0	0
	Captain Welles, of Roxbury,	10	0	0
	Mr. Israel Stoughton, of Dorchester,	5	0	0
	Mr. Richard Parker, of Boston, woollen draper,	4	0	0
	Mr. John Pratt, of Hartford,	4	0	0
	His Majesty's Colonies in eight years gave as follows, viz.:—Massachusetts,	191	3	4½
	Hartford,	39	1	0
	New Haven,	35	1	3
	Plymouth, (town of,)	4	13	0
1643	Lady Moulson,	[‡]100	0	0
	Mr. Bridges,	[‡]50	0	0
	Sundry other persons unknown,	[‡]12	16	4
1644	Mr. Richard Harris, a great silver salt, valued, in 2654, at £5 1s. *3d.* at 5s. per ounce, and a small trencher salt, valued, in 1654, at 10s.,	5	11	3
	Mr. Thomas Langham, a silver beer bowl, valued at	3	3	10
	Mr. Venn, fellow commoner, one fruit dish, one silver sugar spoon, and one silver tipt jug.			
	Extract from the Colony Records, 1644.—"Upon advice from the Commissioners of the United Colonies for general care to be taken for the encouragement of learning and entrance of poor schollers in ye College at Cambridge, it is ordered			
	Amount carried forward,	1839	17	2½

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[*] A question is raised by President Quincy whether this bequest amounted to more than the half of this sum, the phraseology being that he gave "the moiety of his estate." But the earliest records imply that the moiety amounted to the sum above named; and the testimony of the Rev. Thomas Shepard, his cotemporary, and the minister of Cambridge, is positive to the fact that the property of Harvard amounted to £1600. He also gave 320 volumes of books.

[†] The font of types was perhaps bequeathed to the College by Mr. Glover, who was a printer, and who died on the passage to this country. His widow afterward became the wife of President Dunster.

[‡] These three sums, amounting to £162 16s. 4d., were paid into the "country treasury," where they remained till 1713, when they were repaid with interest at six per cent. per annum from 1685, £15 per annum having been allowed from 1643 to 1685.

Date.		£ Sterling.	Mass. Currency.
	Amount brought forward,	1839 17 2¼	
	that the deputies shall commend it to the several townes (and the elders are desired to give their furtherance hereto with declaration of the cause which was propounded by the said Commissioners, and hath been put in practice already by some of the other Colonies, viz., of every family allowing one peck of corn, or 12*d.* in money or other commodity, to be sent to the treasurer for the College at Cambridge, or where else he shall appoint in Boston or Charlestown."		
	From a letter of Dunster's to the Commissioners, in 1647, it appears that this contribution amounted to about £50 per annum. Quincy's History, p. 15—17, vol. I.		
1650	John Newgate (or Newdigate) of Boston, gave by his will an annuity* of £5, being 5 per cent. interest on		100 0 0
1653	John Glover, an annuity† of £5,		100 0 0
1654	Sundry gentlemen, and the town of Charlestown, toward the repairs of the College,		251 15 6
1655	Sir Kenelm Digby gave books to the value of	60 0 0	
1656	Mr. Samuel Parris (sometimes spelt Parish) a silver tankard, valued in inventory of College plate, Nov. 18, 1674,		7 10 0
1657	Edward Hopkins, Governor of Hartford Colony, gave in "corn and meate," according to Treasurer Danforth's account,		100 0 0
	[The facilities of conveyance may be judged of by the charge of £7*s.* 6*d.* for transport to Cambridge. By his will, which was proved in 1657, he gave £500 to trustees for the purpose of "breeding up hopeful youth in a way of learning both at the Grammar School and College for the public service of the country in future times." This bequest was not paid till 1718, and then by a decree of the Lord Chancellor it was put in trust for the benefit of the College and Grammar School at Cambridge, where it has remained ever since, though not with the entire acquiescence of the friends of Yale College, some of whom have urged that it was probable Governor Hopkins intended this legacy for the benefit of that institution. The date of the establishment of Yale College does not favor this idea.]		500 0 0
	Captain Richard Sprague, of Charlestown, by his last will and testament gave to the College thirty ewe sheep, with their lambs, valued at £30. [In College Book No. 1, p. 44, is the following receipt:—"Rec'd of [by] me, John Richards, treasurer of Harvard College in Cambridge, of Thos. Danforth, late treasurer of the said society, six fat cattle, and two oxen, valued at £35 in current country pay, and is in lieu of the sheep he the said Thos. Danforth rec'd for the legacy of Capt. R. Sprague to the said College. Sept. 7, 1669.]		35 0 0
1658	Sir Richard Daniel, Knight, gave many books to the library.		
	Mr. William Colburn, of Boston, gave in money,		5 0 0
	Mr. John Freik gave books to the value of		10 0 0
	Mr. Latham, minister of Bury, in the County of Lancaster,	5 0 0	
	Mr. William Paine, merchant, gave, to be laid out in lands,		20 0 0
	Amount carried forward,	1904 17 2¼	1120 5 6

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*This annuity was sold in 1844 for $333,33.

†This annuity continues to be paid, and is a charge on a building in Dock Square.

Date.		£ Sterling.			Mass. Currency.		
	Amount brought forward,	1904	17	2¼	1129	5	6
1658	Mr. Jn. Paine,* merchant, of Boston, gave,				10	0	0
	Mr. Stranguish, of London,† gave	10	0	0			
	The inhabitants of a certain place (supposed to be Eleutheria, Bahama Islands) out of their poverty gave	124	0	0			
	Mr. Edward Tyng,				9	10	0
	Mr. John Ward, of Ipswich, by his will gave the remainder of his estate to the College; whereof received in *horses*, valued at £72. [Treasurer Danforth credits in his account, "By pt. [payment] of Mr. Ward's legacy £94," and charges for a "loss *in a colt*, had in payment of said legacy, £7. 10," showing the amount realized.]				86	10	0
	Mr. John Willet gave the bell now‡ hanging in the turret.						
	Mr. John Winthrop gave books to the value of				20	0	0
1659	John Dodderidge, Esq., of Fremington, in the county of Devon, gave an annuity of £10 "toward the maintenance of poor scholars," *forever*. [It was paid for *twenty-four years*, but never since, notwithstanding many attempts to recover it.]	240	0	0			
	Robert Keyne,§ of Boston, merchant, gave to the College a legacy of £100, and the half of a house which was valued at £147*s*. 10*d*., and was afterward sold for £150,				250	0	0
	Richard Saltonstall, Esq., being in England, sent over goods which cost there,	100	0	0			
	and money‖ to the amount of	220	0	0			
1660	Mr. Henry Webb bequeathed a dwelling house¶ in Boston,				50	0	0
	Rev. Ezekiel Rogers, of Rowley, bequeathed a part of his library, and the reversion of his house and lands.**						
1664	Thomas Pierce, senior, of Charlestown, left a legacy of				1	0	0
	Capt. Penelton gave, in lumber,				5	0	0
	Mr. Rowse, of Charlestown, saddler, a legacy,				2	10	0
	Mr. Francis Willoughby,				16	0	0
	Mr. Wilson, of Boston, merchant, gave a pewter flagon,					10	0
	Amount carried forward,	2598	17	2¼	1580	05	6

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* These gifts of Jn. and William Paine were laid out for the purchase of land lying north of the old meeting-house, as far as Harvard Hall, being the lot bought of John Betts, in 1661.

† The donations from England are put down as having been in the currency of England, whether it be so stated, or not, in the College books. Sums may have been translated in the College records into lawful money, as it was called; but if this were the case, the result would not often be stated in a precise number of pounds, like the above gift.

‡ By the word *now* must be here meant a date not later than 1668, as the record of the donation, in College Book No. 3, is in Treasurer Danforth's handwriting.

§ Robert Keyne must have been a man not merely of substance, as appears by so considerable a legacy to the College, and of distinction for courage and conduct, as appears by his having been the first Captain of the Artillery Company, but of excellent sense and discretion, and a modest appreciation of himself worthy of being always had in remembrance, as appears by the following sentences in his will with regard to the disposition of his legacy: "—— my desire is that it shall be improved, (not about the buildings or repairs of the College, *for that I think the country should do and look after*,) but for the use and help of such poor and hopeful scholars," &c. And again: "Therefore because I have but little insight in the true ordering of scholars and other things thereto belonging in a College way, and so possibly may dispose of my gift where there is less need, and that it might do more good if it was disposed of in some other way, *I am willing to refer it to the President, Trustees and Overseers*, that are entrusted with the care and ordering of the College, and scholars or students, with the things thereto belonging." The approbation of posterity should be bestowed on such wise self-renunciation, as an offset for the rebukes which Capt. Keyne endured from the church, and the penalties he paid to the Court, in his own day, for making too much profit on his merchandise.

‖ The currency in which this money was paid cannot be ascertained. It is supposed to be sterling, from its having been sent from England. It has also been supposed—see Peirce and Quincy—that this was in payment of his father's legacy to the College.

¶ The house stood on the ground now occupied by the bookstore of Messrs. Little & Brown, and the estate still belongs to the College.

** The College came into possession in 1711. The lands in Rowley were sold, and a farm in Waltham, called the "Rogers Farm," was purchased, and this again was sold, in 1835, for $5000.

Date.		£ Sterling.			Mass. Currency.		
	Amount brought forward,	2598	17	2¼	1580	05	6
	Bridget Wynds, of Charlestown, a legacy of				4	0	0
1669	Several persons of Portsmouth, N. H., engaged to give sixty pounds per annum for seven years, (of this amount Mr. Richard Cutts gave £20 per annum,) and the town, in 1673, voted that what remained unpaid of this sum should be levied on the inhabitants,				420	0	0
	Henry Henley, Esq., of Lyme, Dorsetshire,	27	0	0			
	A gentleman in England, by Peter Sargent,	27	0	0			
1670	Another gentleman in England, by the same,	20	0	0			
	William Pennoyer, an annuity,* from the rents of an estate in Norfolk, England, for the benefit of "two fellows and two scholars," valued at	680	0	0			
1671	James Penn, elder of the First Church in Boston, bequeathed an annuity, to be paid out of the rents of his farm at Pulling Point, to the elders and deacons of the First Church, "for the maintenance of some poor scholar or scholars at the College,"†				10	0	0
1672	Mr. Henry Ashurst, (the same, probably, who was afterward Sir Henry, agent of the Colony,)	100	0	0			
	A contribution was made this year in forty-four towns, for the erection of a new building for the College; and with the exception of four, viz.: Dover and Exeter, N. H., and Kittery and Scarborough, in Maine, they were all within the present limits of this Commonwealth; the most northerly being Newbury, the most southerly, Weymouth; and Concord being the most westerly, except those on or near the Connecticut River, viz: Northampton, Hadley, Hatfield, Springfield, and Westfield. Boston gave £800, and the whole amounted to				2277	6	2
	Sir George Downing, a graduate of the first class, gave, toward the same object,	5	0	0			
1674	A gentleman in England, by Peter Sargent,	24	0	0			
1675	Dr. John Lightfoot, of England, bequeathed his whole library, comprising many volumes of Oriental literature.						
1676	Judith Finch left a legacy of £1 in corn, from which the College realized,					14	6
1678	Theophilus Gale, D. D., bequeathed his library, which was more than equal to all that was in the College library before.						
1679	Joseph Brown, bequeathed,				100	0	0
	and in books,‡				50	0	0
	John Smeadley, of Concord,				10	0	0
1680	Henry Clark, of Hadley,				50	0	0
	Richard Russell bequeathed £100—of which was received in provisions only				81	18	4
	David Wilton,	10	0	0			
1681	Sir Matthew Holworthy bequeathed "to be disposed of by the directors as they shall judge best for the promotion of learning and promulgation of the Gospel."	1000	0	0			
	Capt. John Hull,				100		
	Capt. Samuel Scarlett bequeathed an annuity of £7, but nothing more was ever realized than				10	0	0
1682	Sir John Maynard, "his majesty's sergeant at law," eight chests of books, valued at	400	0	0			
1683	Mr. Henry Ashworth, bequeathed,	100	0	0			
	Mr. Joseph Brown, Mr. Edward Page, Mr. Francis Wainwright, } fellow commoners, gave each a silver goblet.§						
	Amount carried forward,	4991	17	2¼	4643	19	6

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* This annuity continues to be paid, and yields about £50 per annum.

† This legacy continues available to the present day.

‡ This legacy, it is said in the records, was probably never received.

§ Mr. Wainwright graduated in 1686. The other two do not appear to have received a degree.

Date.		£ Sterling.			Mass. Currency.		
	Amount brought forward, ...	4991	17	2¼	4643	19	6
1683	Deacon William Trusedale bequeathed £40—"and still remains due to the College," says the record.						
	Rev. Thomas Shepard gave a silver goblet.						
1687	William Brown, senior, bequeathed	.	.		100	0	0
1690	Robert Thorner, of Baddesley, in the county of Southampton, bequeathed*	500	0	0			
1693	Rev. Edmund Brown, of Sudbury, bequeathed £100, which the College never obtained, notwithstanding the executor was sued for it.						
1694	Madam Mary Anderson gave	.	.		5	0	0
1695	Nathaniel Hulton, senior, citizen and salter of London, ...	100	0	0			
1696	Thomas Gunston, of Stock-Newington, ...	50	0	0			
1697	Hon. Robert Boyle gave £45 per annum "for the salaries of two ministers to teach the natives in the Christian Religion." [No payment of this annuity was made till 1710 when, in compensation for the delay, it was agreed that double the amount should be paid for six years, and after that, £45 were regularly paid till 1785. This makes its duration equivalent to a period of 81 years, and the sum received, in all, £3645.]	3645	0	0			
1698	Mr. Eliakim Hutchinson gave £10, declaring his purpose to give £10 per annum as long as the government should be such as he approved. [He continued the benefaction till his death in 1717, when the whole amount received was] .	.	.		200	0	0
1699	Hon. William Stoughton erected a building, called Stoughton Hall [the first of that name] at the cost of	.	.		1000	0	0
	In 1700, probably, the same gentleman gave a large silver bowl, 48¼ oz., and a goblet, 21 oz.,	15	12	9			
1705	Capt. Richard Sprague, late of Charlestown, . .	.	.		400	0	0
1708	Benjamin Brown, of Salem, bequeathed for indigent students, ...	.	.		200	0	0
1713	Thomas Brattle, Esq., for a mathematical instructor or professor,†	.	.		200	0	0
1714	Thomas Richards, £30, at 33⅓ per cent. discount, is equal to	20	0	0			
1716	Rev. Daniel Williams, an annuity‡ of £60 for the support of two preachers among the "Indians and Blacks," representing a capital	1000	0	0			
	William Brown, of Salem, for indigent students, £100, at 40 per cent. discount from sterling money, or 15 per cent. from the standard of the Province, ...	60	0	0			
	General Nicholson gave a number of books.						
1717	Rev. William Brattle, of Cambridge, £250, at 40 per cent. discount, ...	150	0	0			
1718	Madam Hutchinson, widow of Eliakim H., £10, at 50 per cent. discount, ...	5	0	0			
1719	John Walley, Esq., £100, at 50 per cent. discount,	50	0	0			
	THOMAS HOLLIS. [This first donation from this distinguished benefactor was received this year,						
	Amount carried forward, ...	10587	9	11¼	6748	19	6

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* This legacy was given while President Mather was in England, but in consequence of certain provisions in the will, the last payment was not made till 1781. In that year Treasurer Storer acknowledges the receipt of £200 in full of this legacy.

† At this period began the depreciation of the currency of the Province, in consequence of the issue of bills of credit by the government. Specie disappeared, and the bills increased in number, and diminished in value, till after 1750, when a large sum in silver was received from England, to reimburse the expenses of the Colony in the French war, and formed a sufficient basis of circulation till the war of the Revolution. The rate of depreciation is adopted generally on the authority of Mr. Felt, though memoranda in the College records, and some private sources of information have been consulted, and occasionally followed. Probably prices in the money market were not so definite as they would have been in a larger and more wealthy community, and the rates here given must be considered as generally, rather than universally, correct.

‡ This annuity has long since ceased to be paid; but the unexpended balances have laid the foundation of a fund which now amounts to $15,000, and upward, the income of which is still devoted to the original purpose.

Date.		£ Sterling.			Mass. Currency.		
	Amount brought forward, ...	10587	9	11¼	6748	19	6
1719	and was followed, as will be seen, by many generous gifts in subsequent years. The present list of them has been made out, with much care, from original documents,—many of them in Hollis's own hand, and others being accounts by the College treasurers of the funds received from him.] This year, in Massachusetts currency, £296. 16. 1¼, which at 50 per cent. discount, is equal to	148	8	0¾			
1720	Hon. Samuel Brown, of Salem, £150, equal to .	75	0	0			
	Hollis gave, this year, a large number of books, and in money £665. 5. 6. or	332	12	9			
1721	And the next year £1784. 18., equal, at 54 per cent. discount, to	820	19	0			
1722	Hollis gave many valuable books, a portrait of himself, and money to the amount £332. 10. currency, which, at 57 per cent. discount, is equal to	143	4	3½			
1723	Capt. Ephraim Flynt, of Concord, £100 at 60 per cent. discount, ...	40	0	0			
	Samuel Gerrish, books valued at £10 currency, or	4	0	0			
	Henry Gibbs, of Watertown, £100, equal to . .	40	0	0			
	Madam Mary Saltonstall, wife of Gov. Saltonstall, gave £100 currency, or	40	0	0			
	Hollis gave many books for the library, and in money £580, which, at 60 per cent. discount, is	232	0	0			
1724	Thomas Danforth, Esq., of Cambridge, £100, at 64⅔ per cent. discount, ...	35	6	8			
	John Frizzle, Esq., bequeathed, £150, equal to .	53	0	0			
	Hollis presented books to the value of, . . .	100	0	0			
	and procured more from the following persons, viz.:						
	John Hollis, his brother, to the value of . . .	64	0	0			
	Thomas Hollis, his nephew,						
	Dr. Isaac Watts,						
	Rev. Joseph Hussey, and probably from						
	Mr. Harris, of London.*						
1725	Mrs. Anne Mills bequeathed £50, disc't. 64⅔ pr. cent.,	17	18	4			
	Hon. Gurdon Saltonstall, Governor of Connecticut, bequeathed £100, which, at the same discount, is	35	6	8			
	Hollis gave three valuable cases of books, (cost not stated,) and procured a large number, also, from the following persons:						
	Rev. Dr. Guise, of Hertford,						
	Mr. Ducane, of London, 5 guineas toward purchase of Mr. Boyle's sermons, ...	5	5	0			
	Edward Leeds, of Hackney,						
	William Woolley, of Clapton, Hackney, and probably						
	John Lloyd, of London.						
1726	Hollis sent to the College, besides another large number of books, money to the amount of £1,170 currency, which, at 66⅔ per cent. disc't., is	390	0	0			
	This was for his professorship of Mathematics. He also procured a present of Greek and Hebrew types from a friend of his, which cost £117 of our currency, or in London, ...	39	0	0			
	And he induced the two following gentlemen to send a donation of books to the library, viz.:						
	Dr. Richard Mead, and						
	Mr. John Reynolds, timber merchant, London.						
1727	Rev. Thomas Cotton, of London, £100 for President's salary, ...	33	6	8			
	And £100 for books, at 66⅔ per cent. discount, .	33	6	8			
	Hollis gave an apparatus for experimental philosophy, which cost in England, ...	126	10	0			
	And presented many valuable books given by himself and his friends.						
	Amount carried forward, ...	13396	9	0¾	6748	19	6

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* The value of the above four gifts is not stated.

Date.		£ Sterling.			Mass. Currency.		
	Amount brought forward, ...	13396	9	0¼	6748	19	6
1729	John and William Vassal gave each a silver tankard, weighing about 20 ounces, worth probably about	10	10	0			
1730	Madam Mary Saltonstall, bequeathed £1000, average discount 70 per cent., ...	300	0	0			
1731	Col. Samuel Brown, of Salem, left by his will £60 to the College, for the purchase of a piece of plate. Discount that year about 68 per cent., .	19	4	0			
	Mr. John Chester, of Connecticut, £50, equal to .	16	0	0			
1732	Mr. Nathaniel Hollis, brother to Thomas, . .	100	0	0			
	Mr. Thomas Hollis, son of Nathaniel, and heir to Thomas, who died in January of this year, .	200	0	0			
1733	Rev. Dean Berkeley procured for the College a valuable collection of Greek and Latin books.						
1734	Mr. Thomas Hollis, also presented a valuable collection of books, and the next year he gave another.						
1737	Hon. Thomas Fitch, of Boston, bequeathed £300, discount 77 per cent., ...	69	0	0			
	President Wadsworth, £110, at 77 per cent. disc., is	25	6	0			
	Rev. Dr. Guise, } Rev. Dr. Watts, } presented some books, and Dr. Watts gave all his own works, as they appeared.						
1738	John Ellery, of Hartford, £150, at 78 per cent. disc.	33	0	0			
	James Townsend, of Boston, £500, for the Hollis Professor of Divinity, ...	110	0	0			
1739	Hon. Thomas Hutchinson, £300, for the Hollis Professor of Divinity, ...	66	0	0			
	Mrs. Dorothy Saltonstall, of Boston, bequeathed £300 for indigent scholars, discount 78 per cent.	66	0	0			
1742	Daniel Henchman, Esq., presented 100 ounces of silver for the benefit of the Professor of Divinity,	22	10	0			
	Mrs. Holden, widow of Mr. Holden, of London,—merchant, and governor of the bank of England,—and her daughters, gave for the building of a chapel, ...	400	0	0			
1743	President Holyoke, £100, at 80 per cent. discount,	20	0	0			
1744	Hon. Colin Campbell, of the Island of Jamaica, gave a new transit instrument, and repaired the quadrant, at a *large expense*.						
	Hon. Andrew Oliver, presented a folio Bible for Holden Chapel.						
1747	Daniel Henchman, Esq., bequeathed, £250, at 85 per cent. discount, equal to*	37	10	0			
	Col. John Vassall gave a very valuable reflecting telescope.						
1748	The Society for the Propagation of the Gospel made a large donation of books, through the Bishop of Cloyne, by whose influence they were procured.						
1750	Mr. Francis Archibald, and Mr. William Davis, of Boston, gave some anatomical preparations.						
	Hon. Judge Dudley bequeathed for an annual lecture £133. 6. 8., which, at 90 per cent. discount, is	13	6	8			
	Mr. Henry Sherburne, of Portsmouth, N. H., £100, at 90 per cent. discount, ...	10	0	0			
	Rev. Ebenezer Turell, of Medford, is supposed to have given the antique chair, called the President's chair; but at what period is not known. It is only a tradition that it was received during the presidency of Holyoke.						
	Admiral Warren gave a fine reflecting telescope.						
1752	William James, Esq., of Jamaica, medical books, to the value of†	25	0	0			
	Amount carried forward, ...	14989	15	8¼	6748	19	6

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* This bequest, as well as the previous gift of 100 ounces of silver, was for the benefit of the Hollis Professor of Divinity, provided he was "in full communion with some Congregational or Presbyterian Church, and taught the principles of the Christian religion according to the well known confession of faith drawn up by the synod of the churches in New England." Otherwise the interest was to be given to some deserving indigent student.

† At this date, the process of a restoration of the currency to a specie basis was in progress;

Date.			£ Sterling.	Mass. Currency.
	Amount brought forward, ...		14939 15 8¼	6748 19 6
1758	Daniel Henchman, the income to be divided between the two Hollis professors, ...		. .	66 13 4
	Thomas Hollis, of Lincoln's Inn, grandson of Nathaniel Hollis, through his son Thomas, made his first donation of books to the library this year.*			
1760	Samuel Epes, Esq., of Ipswich, bequeathed, without any restriction, the sum of		. .	300 0 0
	Henry Flynt, Esq., the worthy tutor of fifty-five years' standing, bequeathed £700, O. T., for the benefit of the tutors, and £112. 10., O. T., or 50 Spanish dollars, for the benefit of one or more needy scholars. These sums are equivalent, respectively, to		70 0 0	
	and		11 5 0	
1761	Hon. William Dummer, bequeathed, for the purchase of books, ...		. .	66 13 4
	and for the benefit of the Hollis professors, .		. .	183 6 8
	Hon. Thomas Hancock, gave a fine reflecting telescope.			
1762	Stephen Sewall, A. B., for the professor of Hebrew, £100, O. T., ...		. .	13 6 8
1763	Samuel Dean, A. M., tutor, Stephen Sewall, A. B., and Andrew Eliot, A. B., } presented a clock for the Buttery, .		. .	4 0 0
1764	[A general subscription was made this year for the purpose of repairing the loss occasioned by the destruction of Harvard Hall by fire. The names of the donors, with the sums they contributed, are preserved in the College Records, but it will be sufficient to state here the sum received from the several towns or counties. They were as follows.]			
1764	Boston, ...	£476 0 6		
	Charlestown, ...	25 13 0		
	Marblehead, ...	58 17 0		
	Salem, ...	98 6 9		
	Worcester County, ...	33 2 0		
	Cambridge, ...	65 12 6		
	Gloucester, ...	28 19 0		
	Newbury, ...	23 5 0		
	Barnstable County, ...	11 6 0		
	Other places, ...	57 15 0		
				878 16 9
	Thomas Hollis, of Lincoln's Inn, ...		200 0 0	
	And a case of books containing 56 vols. Books were also presented by the following persons, viz.:			
	Dr. Drummond, Archbishop of York			
	Benjamin Avery, LL. D.			
	Dr. Lardner,			
	Mr. Peter Livius, N. H.			
	Mr. Nathaniel Neal,			
	Rev. William Harris of Honiton, Devonshire,			
	Joseph Jennings,			
	Rev. Jonas Merriam,			
	Rev. John Usher, of Bristol, R. I.			
	The Society for Propagating the Gospel in Foreign Parts, ...		100 0 0	
	The Society for Propagating the Gospel in New England and the parts adjacent, ...		200 0 0	
	Amount carried forward, ...		15521 0 8¼	8211 16 3

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and the College found itself a loser by the foregoing extraordinary depreciation, to the extent of 75 per cent. of its property invested in bonds, and notes. The income of the foundations of the Hollis professorships was reduced from £80 per annum to £20. See copy of a memorial of the Corporation to the legislature in 1779, among the files in the safe at the library.

* It consisted of Milton's Works, 2 vols., and 44 vols. of tracts, all in quarto. This was the forerunner of many similar gifts.

Date.		£ Sterling.	Mass. Currency.
	Amount brought forward,	15521 0 8¾	8211 16 3
1765	Dr. Erskine, of Edinburgh and Dr. Fothergill, of London, presented valuable books.		
1765	Thomas Hollis, of Lincoln's Inn, nine cases of valuable books.		
	The General Assembly of New Hampshire, on the recommendation of Gov. Benning Wentworth, gave books to the value of		300 0 0
	Rev. Joseph Sewall,		20 0 0
	The Society for Propagating the Gospel in New England and the parts adjacent,	100 0 0	
	Rev. George Whitefield,	5 5 0	
	Hon. Thomas Hancock, for a professorship of Hebrew and other Oriental Languages,—the first professorship founded by a native of New England,	1000 0 0	
	Hon. John Alford,*		1362 8 5
1766	The Edinburgh Society for Promoting Religious Knowledge presented 25 volumes of books, and other cases to the value of	10 12 11	
	Books were also given by		
	The Rev. East Apthorp,		
	John Beaton,		
	Thomas Broomfield and Mrs. Grace Gardner,		
	Rev. John Erskine,		
	Thomas Hollis, of Lincoln's Inn, seven cases of valuable books.		
	Richard Jackson, of London, a number of valuable books.		
	Mr. Kincaid, the king's printer, at Edinburgh, a number of valuable books.		
	Edward Kitchen, of Salem, devised to the College,		133 6 8
	Samuel Quincy, of Boston, gave a carpet for the apparatus chamber, and books were presented by the following persons, namely:		
	John Langdon, of Boston,		
	Jasper Mauduit, of London,		
	Daniel Mildred, of do., in behalf of a "meeting for the sufferings of the Quakers,"		
	Capt. Jn. Miller, of Charlestown, to the value of		7 4 0
	Epes Sargent, to the value of		10 0 0
	Barlow Trecothick, Esq., Alderman of London,		
	The trustees of the British Museum.		
1767	Hon. John Hancock subscribed £500 sterling for the purchase of books for the library. The order sent to London, however, cost £54. 4. in addition, making his donation,	554 4 0	
	Dr. Lardner gave four volumes of his works, and many other persons contributed to the growth of the new library.		
	Dr. Haberden presented	3 3 0	
	Thomas Hollis gave fourteen boxes of books, and subscribed for Philosophical Apparatus,	200 0 0	
	Timothy Hollis,	20 0 0	
	Jasper Mauduit,	50 0 0	
	John South,	10 0 0	
	Messrs. Tappanden and Hanby,	10 10 0	
1768	Hon. James Bowdoin presented an Orrery which cost	86 5 0	
	Thomas Hollis, of Lincoln's Inn, seven more cases of books.		
	Lieut. Gov. Hutchinson, Samuel Savage, merchant, of London, Hon. Royall Tyler, and Rev. George Whitefield, each gave sundry books, and the latter gentleman "procured large benefactions for the College."		
	Amount carried forward,	17571 0 7¾	10044 15 4

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* This legacy was given to Harvard College by the executors of Mr. Alford's will, he having merely directed that a certain portion of his estate should be devoted to "pious and charitable purposes," leaving the selection of those purposes to his executors.

Date.		£ Sterling.	Mass. Currency
	Amount brought forward,	17571 0 7¾	10044 15 4
1769.	Thomas Hollis, of Lincoln's Inn, again presented three cases of books, and many volumes were given by a considerable number of persons, among others, some by Dr. Franklin.		
	President Holyoke, bequeathed		18 6 8
	Thomas Hubbard, the treasurer of the College from 1752 to 1773, gave, toward repairing the loss sustained by the burning of Harvard Hall,	100 0 0	
	Society for Propagating Christian Knowledge, in Scotland, gave, for the purchase of books for the library,	30 0 0	
	Dr. E. A. Holyoke, of Salem, gave a telescope of *twenty-eight feet.*		
1770	Thomas Hollis, of Lincoln's Inn, two large boxes of books.		
	Anthony Ferguson, for the purchase of books,	3 0 0	
	Books were also presented by several other persons this year.		
1771	Dr. Erskine, Dr. Franklin, and Gov. Pownal gave more books.		
1772	Nicholas Boylston, Esq., merchant, of Boston, bequeathed for the support of a Profess'r of Rhetoric,		1500 0 0
	Dr. N. Appleton, of Cambridge, for a scholarship,		30 0 0
	Hon. John Hancock presented a carpet for the Library, and one for the philosophy chamber, and paper for the walls of the latter. He added some books to his former donations.		
	Dr. Ezekiel Hersey, of Hingham, for a professorship of Anatomy and Physic,		1000 0 0
	Books were given by many individuals, and among others by		
	Thomas Palmer, Esq., who presented the Account of Herculaneum, in 20 vols., folio.		
	Samuel Sparrow, of London, merchant, gave a collection of books valued at	20 0 0	
	Thomas Wibird left, for the purchase of books, a legacy of	50 0 0	
1773	Dr. Cooper gave, for books, the sum of		8 0 0
	Several other persons presented a few volumes each.		
1774	Hon. John Hancock again gave some books, as did several other gentlemen.		
	Thomas Hollis, of Lincoln's Inn, who died in this year, bequeathed for a fund for the purchase of books, the sum of	500 0 0	
	Hon. Thomas Hubbard, the late treasur'r, bequeath'd And a part of his library.		300 0 0
	Josiah Quincy, Jr. bequeathed to the College the sum of £2000 sterling, in case his son Josiah should die before attaining his majority, or without issue. As "his son Josiah" is still living, surrounded by all "that should accompany old age," the College has never received this legacy in money, but has enjoyed the benefit of the services of that son, as its president, for the term of nearly seventeen years, "by which the College hath been a great gainer."		
1777	Rev. John Barnard, of Marblehead, bequeathed,		200 0 0
1779	Theodore Atkinson, of Portsmouth, bequeathed to the College £100 sterling; but of this nothing was received till 1804, when there is a credit in the College books of		44 14 6
	No more appears ever to have been obtained.		
	George Gardner, of Salem, bequeathed the sum of £1333, but it does not appear that anything was ever received on account of it.		
	Amount carried forward,	18274 0 7¾	13140 16 6

Date.		£ Sterling.	Mass. Currency.
	Amount brought forward,	18274 0 7¾	18140 16 6
1780 1780	Joseph Mico, of London, who for forty years performed the business of the College without charge, was deservedly enrolled among its benefactors, by a vote of the Corporation. The amount which he might reasonably have charged for his services, though unknown, can not be deemed inconsiderable.		
	The Royal Society presented Maskeline's Astronomical Observations.		
1783	Benjamin Pemberton, Esq., bequeathed,		20 0 0
	The Royal Society voted to send their publications annually.		
1784	Rev. Dr. Appleton bequeathed, for the same purpose for which he gave £30 in 1772,		26 0 0
	The following persons presented books to the library this year, viz.:—		
	Rev. Dr. Erskine,		
	Rev. Hugh Farmer,		
	Mr. William Foster,		
	Mr. Benjamin Guild,		
	Thomas Brand Hollis,		
	Dr. John Jeffries,		
	Gen. Knox,		
	Thomas Lee, Esq., of Cambridge,		
	Rev. Mr. Lindsey,		
	Dr. Price,		
	Rev. Thomas Reader,		
	Rev. Mr. Toulmin,		
	Jas. Winthrop, Esq.		
	The king of France offered to send from the Royal Garden seeds and plants, free of expense.		
	The Meteorological Society of Manheim offered to send Meteorological instruments, &c.		
1785	Mrs. Joanna Alford, for indigent students,		133 6 8
	Books were presented by sundry persons, among others, a valuable collection by Granville Sharp.		
1789	Thomas Brand Hollis gave, this year, as he had also done in 1787 and 1788, many curious and valuable books.		
1790	Mrs. Sarah Derby, in aid of the professorship founded by her late husband, Dr. E. Hersey,		1006 1 7
	Mrs. Sarah Winslow, for the aid of the town of Tyngsborough, in supporting a minister and a schoolmaster,		1367 10 0
1791	Hon. James Bowdoin, for prizes for dissertations,		400 0 0
	Dr. Erskine, a frequent benefactor in former years, again gave a number of books.		
	Major William Erving, for a professorship of chemistry,		1000 0 0
	Also many of the books of his library.		
	Mr. Edward Savage presented a portrait of Gen. Washington.		
	Col. John Trumbull, a portrait of Cardinal Bentivoglio.		
1792	Dr. John Cuming, for the professor of Physic, £300 sterling,		400 0 0
1793	Thomas Brand Hollis, many valuable books.		
	Dr. Lettson, of London, in addition to several gifts previously made, this year presented a valuable collection of minerals, numbering more than 700 specimens.		
1794	Dr. Abner Hersey, of Barnstable, bequeathed, for the Professor of Physic,		500 0 0
	Total,	$18274 0 7¾	17998 14 9
	Converted to dollars, and carried forward,		$141,197 04

Date.		Dollars.
	Amount brought forward, ...	$141,197 04
1798	Jonathan Mason, of Boston, for the Professor of Divinity, $500,	500 00
1800	Ward N. Boylston, for the purchase of medical and surgical works, $500, ...	500 00
	He also presented, at sundry times, a number of books of this description, together with prints, &c.	
	Dr. John Nichols, of London, presented a large number of anatomical preparations, calculi, engravings, &c.	
1801	Samuel Shapleigh, late librarian, gave a piece of real estate in Kittery, and the "residue" of his estate for the increase of the library. The sum obtained from this bequest was .	3,000 00
1803	Ward N. Boylston, Esq., an annuity of $100, for prizes for dissertations on medical subjects, equal to the sum of $2000, which was afterward obtained for it, ...	2,000 00
1805	A subscription was raised for establishing a Botanic Garden, and a professorship of Natural History, for which purposes there was contributed the sum of	31,333 33
1806	Thomas Brand Hollis bequeathed, for the library, £100 sterling,	444 44
1811	Samuel Dexter, for a lectureship for the critical exposition of the Scriptures, ...	5,000 00
1812	Mary Lindall, of Charlestown, for indigent scholars, £100, .	333 33
1814	Esther Sprague, of Dedham, for the professor of the Theory and Practice of Physic, ...	2,000 00
	Samuel Eliot, for professorship of Greek Language and Literature, ...	20,000 00
1815	Samuel Parkman, for a professorship of Theology, a township of land in Maine, for which was obtained afterward the sum of,	5,000 00
1816	Count Rumford, for a professorship, or lectureship, on the application of science to the arts, ...	28,000 00
	Abiel Smith, for a professorship of the French and Spanish Languages, ...	20,000 00
1817	A subscription for establishing a Theological School in connection with the College amounted to	30,000 00
	Ward N. Boylston, for prizes for elocution, an annuity of $50, afterward $60, subsequently $1000, ...	1,000 00
	Israel Thorndike, for the purchase of books, for theological library, ...	500 00
	Judge Wendell, twenty half eagles, for a Christening basin, .	100 00
1818	Israel Thorndike presented the Ebeling Library, which cost, .	6,500 00
1819	Theodore Lyman, Jr., presented the Panorama of Athens, valued at, ...	2,500 00
	Drs. James Jackson, John C. Warren, John Gorham, Walter Channing, and Jacob Bigelow, professors in the Medical School, presented a library to the Medical College.	
1820	Ward N. Boylston presented many volumes to the Medical Library.	
	Moses Brown bequeathed to the Theological Institution, . .	20,00 00
	Several gentlemen gave to the Mineralogical Cabinet about, .	23,00 00
	Thomas Cary, for aid to theological students, bequeathed the "residue" of his estate, which amounted to about, . .	3,600 00
	Thomas Palmer bequeathed his library of 1200 volumes, valued at, ...	2,500 00
	Andrew Ritchie presented a valuable collection of minerals.	
1821	An anonymous donation, of which the income is to be given to the most distinguished scholar among the indigent members of the senior class, ...	1,200 00
	Subscription for a professor of Mineralogy and Geology, . .	1,200 00
1822	James Perkins, for a professorship, such as "the President and Fellows, with the concurrence of the Overseers, shall judge to be most useful,"	20,000 00
	James Winthrop bequeathed his collection of coins, valued at,	253 00
1823	S. A. Eliot, gave the Warden Library, ...	5,000 00
	The Linnæan Society gave their collection of animals, shells, minerals, &c., valued at, ...	300 00
1825	William Breed left a portion of the residue of his property, to be given by his executor "to objects of charity, or for the promotion of learning piety, and religion, especially among the rising generation." In pursuance of this direction, his executor, the Hon. P. O. Thacher, appropriated to the College,	2,000 00
	Amount carried forward, ...	$340,261 14

Date.		Dollars.
	Amount brought forward, ...	$340,261 14
1825	A person unknown gave, for the purchase of books, . . .	50 00
	Rev. F. Parkman, presented 400 models of crystals.	
1826	William H. Eliot, gave a copy of the "Description del'Egypte,"	1,000 00
	Another subscription was made in this year for the benefit of the Theological School, and the Society for the promotion of Theological Education in Harvard University was formed. The sum collected at this time was, ...	19,323 23
1829	Nathan Dane, for a Professorship of Law, ...	10,000 00
	George Partridge, for the Theological School, ...	2,000 00
	Subscription for a professorship of Pulpit Eloquence and Pastoral Care, to which Rev. Henry Ware, Jr., was first appointed,	13,180 00
1830	Eben Francis, treasurer, gave the amount of his commission from the Hollis Funds, for a clock for the Library, . .	150 00
1831	Christopher Gore* gave the residue of his estate, of which $38,000 are reserved for annuities bequeathed by him. The whole ultimately receivable by the College, amounts to, .	94,888 00
	Thomas Perkins, for an essay on the effects of intemperance, and for another on the importance of industrious habits in youth, ...	200 00
	Isaiah Thomas, bequeathed books from his library, to the value of, ...	300 00
1832	Thomas W. Ward, gave an interesting collection of Crania, casts, and drawings, which had belonged to the late Dr. Caspar Spurzheim, valued at about, ...	100 00
1833	Samuel Livermore, of Portsmouth, N. H. bequeathed his whole library of foreign law, 300 volumes, valued in the inventory of his estate, at, ...	6,000 00
1834	Rev. George Chapman, intestate, desired that the residue of his estate should be given to Harvard College, for the benefit of indigent students in the Theological School. This wish was carried into effect by his heirs, and the sum received from the late Jonathan Chapman, his brother, was, . .	1,261 42
	Joshua Fisher, for the foundation of a Professorship of Natural History, ...	20,000 00
	John McLean,† for a Professorship of History, ...	20,552 30
	Rev. Dr. Eliphalet Porter, for promoting Theological Education,	1,000 00
1835	Sarah Jackson, for the aid of indigent theological students, .	10,000 00
	William Pomeroy, for the same object, ...	1,000 00
	Dr. William J. Walker, half the proceeds of a share in the Athenæum, ...	90 00
1836	Hannah C. Andrews, for the Theological School, ...	500 00
	Joshua Clapp, for the Theological School, ...	1,000 00
	The class graduating in 1836 gave 111 volumes to the Library.	
	N. Dane, in addition to $10,000 given in 1831, for the Law School, ...	5,000 00
	Thirteen gentlemen subscribed $10 each for a portrait of Chancellor Kent, to be placed in the Law Library, ...	130 00
1838	Several gentlemen subscribed for the purpose of raising a fund, the income of which should be loaned to meritorious students, and the sum contributed was placed in the hands of trustees for this purpose. It amounted to $12,050, . .	12,050 00
	Thirty gentlemen also contributed $100 each for an Astronomical Observatory, ...	3,000 00
	Dr. T. M. Harris gave 400 volumes to the Theological School.	
	The heirs of the late William Taylor, Esq., gave about 700 volumes to the College Library.	
	Timothy Walker, bequeathed to the Theological School, . .	1,000 00
1839	Joshua Clapp, a second donation to the Theological School, .	1,000 00
	Mrs. Mary Tufts, for do.	500 00
1840	John Foster, for the aid of professional students, ...	2,000 00
	Dr. F. Parkman, for a professorship in the Theological School,	5,000 00
1841	Mrs. Cragie, bequeathed a valuable collection of shells.	
	The Misses Dunster, only surviving descendants of President Dunster, presented his Bible, of which the Old Testament is in Hebrew, and the New Testament in Greek.	
	Henry Lienow, devised one half of the residue of his estate to	
	Amount carried forward, ...	$572,535 09

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* This bequest was made in 1826. † This bequest was made in 1821.

Date.		Dollars.
	Amount brought forward, ...	$572,535 09
	Harvard College, for the use of the Theological School. There has been received from it up to this time, August, 1848, the sum of, ...	3,808 60
1841	The Society for Promoting Theological Education in Harvard College, gave for increasing the amount appropriated to the Dexter Lectureship on Biblical Criticism, the sum of, . .	10,000 00
1842	The Association of the Alumni, for defraying in part the expense of providing a large hall for public meetings, . .	2,266 05
	Francis Peabody presented a valuable telescope.	
	Chief Justice Shaw, a copy of Stuart's portrait of Washington.	
	A subscription was made for the College Library by thirty-four gentlemen, to the amount of, ...	21,008 00
1843	W. N. Boylston, bequeathed, to be paid on the death of Mrs. Boylston, for the fund for prizes for Elocution, . . .	1,000 00
	Do., for the fund for prizes for Medical Essays, ...	1,000 00
	Do., for the fund for an Anatomical Museum and Library Room,	1,000 00
	"A few friends of science," presented, through Prof. Webster, a collection of minerals and fossils, which cost, . . .	1,000 00
	Prof. Gray, gave a collection of specimens of the rocks and minerals of New York and New Jersey.	
	David Sears, for the erection of an Observatory Tower, . .	5,000 00
	A subscription for a Telescope, and other instruments necessary for an Observatory, was raised this year, to the amount of,	20,120 00
1844	Horace A. Haven, bequeathed, for the purchase of mathematical and astronomical works for the Library, ...	3,000 00
	Israel Munson, bequeathed, unconditionally, ...	15,000 00
1845	William Prescott, bequeathed, for the purchase of books for the Library, ...	3,000 00
	Leverett Saltonstall, for aid to indigent students, . . .	500 00
	Alexander Vattemare, presented some valuable books.	
	David Sears, toward a fund for the salary of an observer, .	5,000 00
1846	Peter C. Brooks, for erecting a house for the President, . . .	10,000 00
	Hon. Thomas Grenville, of London, gave, through President Everett, £100 for the purchase of books for the Library, .	480 00
	Miss N. Kendall, for the Theological School, ...	2,000 00
	Dr. George Parkman, gave the land on which has been erected the new Medical School building.	
	A subscription was made among the friends and pupils of Dr. Abbott, of Exeter, N. H., for the foundation of a Scholarship to be called by his name. The sum subscribed was, .	1,685 00
	Wm. G. Stearns, presented a set of silver keys, with a case.	
	A subscription for a fund to support an astronomical observer and his assistants for two years was made, which amounted to,	5,050 00
	A subscription for the purchase of the skeleton of a Mastodon was made, to the amount of, ...	3,065 00
	A subscription for the new Medical School building, . .	4,600 00
1847	A. W. Fuller, for the Theological School, ...	1,000 00
	Dr. George Hayward, 152 models, of various forms of disease, to the cabinet of the Medical School.	
	Dr. J. C. Warren, a cabinet of preparations to Medical School, valued at, ...	10,000 00
	Also a fund for the preservation and increase of the same, .	5,000 00
	Abbott Lawrence, for the Scientific School, ...	50,000 00
1848	Edward B. Phillips, bequeathed for the Observatory, . .	100,000 00
	Professor J. W. Webster, presented to the Library for College Chapel, a complete set of Chants for male voices.	
	Mr. F. E. Hall, Class of 1846, made valuable donations of books to the Library, and a copy of the Koran in manuscript.	
	Hon. E. Lane, presented the Library with a valuable collection of manuscripts, chiefly in the Delaware language.	
	F. Field, Esq., of Bath, England, presented a valuable Fossil Saurian.	
	N. D. Gould, Esq., presented a beautiful specimen of Chirography.	
	The Class of 1802, presented to the Corporation their fund, of,	4,000 00
	A Beneficiary, gave to "Theological Fund,"	75 00
1849	More than six thousand specimens of minerals were added to	
	Amount carried forward, ...	$862,142 74

Date.		Dollars.
	Amount brought forward, ...	$862,142 74
	the Cabinet, by the liberality of sundry gentlemen, who gave toward the purchase of the collection, the sum of, . . .	8,175 00
1849	Henry S. Sandford, Esq., presented a complete collection of the various materials used in the manufacture of the porcelain of Berlin.	
	Hon. Abbott Lawrence, gave in addition to his former donation for a Scientific School, the sum of $1,500 per annum for five years, amounting to, ...	7,500 00
	Dr. J. C. Warren, presented a valuable collection of casts of Crania, for the Anatomical Museum.	
	Thomas C. Clark, Esq., presented a portrait of Dr. Samuel Cooper, painted by Copley.	
	Hon. Edward Everett, caused the manuscripts presented to the College by Chief Justice Lane, to be arranged and bound in 16 volumes at his own expense, and placed in a trunk for safe keeping.	
1850	The Lords of the Treasury, England, presented a copy of "Fauna Antiqne Scivalensis."	
	A marble bust of Rev. Dr. Pierce, of Brookline, was presented to the College, by several gentlemen.	
	The Class of 1815, presented a Fund to be called the "Kirkland Scholarship Fund of 1815," amounting to, ...	2,303 00
	W. L. Lee, Esq., presented specimens of Lava, Coral, &c., from the Sandwich Islands and Oregon.	
	Dr. J. C. Warren, presented a bust of Dr. John Warren, first professor of Anatomy in the University.	
	Miss Anna W. Storer, presented a portrait of her father, Eben Storer, who was Treasurer of the College for the term of thirty years.	
1851	Hon. Thomas H. Perkins, presented to the Library, "Audubon's Quadrupeds of America," with a description of the same.	
	A number of gentlemen raised a fund by subscription and expended the same, by adding a new wing to the Observatory at Cambridge, amounting to, ...	4,800 00
	J. I. Bowditch, Esq., presented to the Observatory a "Comet Seeker."	
	Mr. W. W. Sever, presented a collection of manuscript papers, relating to the history of the College.	
1852	Uriah A. Boyden, Esq., presented for the purchase of books on Physics, the sum of, ...	300 00
	He also, presented 69 vols. of the "Annalin der Physick."	
	Mrs Sarah H. Oliver, presented an original portrait of Whitefield.	
	Dr. Calvin Thomas, of 'Tyngsboro', bequeathed, for "Indigent Theological Students," the sum of, ...	100 00
	Mr. Lewis Gould, of Ashby, bequeathed to 'Theological School,'	868 00
	A number of gentlemen, subscribed for the purchase of a portrait of Prof. E. I. Channing, and presented the same to the College.	
	Class of 1817, presented, to found Scholarships, ...	1,015 00
	Charles Sanders, of Cambridge, presented a copy of the "Paleographic Universelle," in four vols.	
	Several gentlemen, in behalf of the Law School, presented portraits of Professors Parker and Parsons.	
	Leverett Saltonstall, Esq., presented a portrait of Sir Richard Saltonstall, being a copy of the original, by Rembrandt.	
1853	Several gentlemen subscribed to a fund to be expended in the purchase of books for the "Department of English Poetry," the sum amounted to, ...	1,105 00
	James Brown, Esq., presented a costly pulpit Bible for the use of the Chapel in Divinity Hall.	
	The Class of 1814, subscribed, to found Scholarships, . . .	2,300 00
	A subscription to purchase bust of Dr. Kirkland, was made, and the same presented to the Library.	
	Subscription for the purchase of objects of Natural History, belonging to Prof. Agassiz was made, amounting to, . .	10,175 00
	Dr. George C. Shuttuck, presented, toward sustaining the Chair	
	Amount carried forward, ...	$895,783 74

Date.		Dollars.
	Amount brought forward, ...	$895,788 74
	of Pathological Anatomy in the Massachusetts Medical College, the sum of $14,000—the income arising from the same, to be paid to the incumbent of said Chair, ...	14,000 00
1853	Mr. N. Smith, presented a silver Tankard, once the property of Henry Dunster, the first President.	
	The Class of 1835, subscribed to found Scholarships, . . .	245 00
1854	Hon. Jonathan Phillips, presented $10,000—the income thereof, to sustain a "Greek Professor,"	10,000 00
	Dr. George C. Shattuck, presented toward sustaining students in Mathematics, or in the study of the Languages, the sum of,	10,000 00
	Hon. T. H. Perkins, presented a bust of Hon. Edward Everett, by Powers.	
	Mrs. F. Parkman, presented to the Library of the Theological School, books on Theology, the property of her late husband, Dr. Francis Parkman.	
	Miss Caroline Plummer, of Salem, bequeathed $15,000—the income thereof, to be used for the support of a "Professor of the Philosophy of the Heart,"	15,000 00
	The American Sunday School Union, presented to the Library, a complete set of their publications, amounting to more than nine hundred volumes.	
	Sundry gentlemen subscribed for, and presented to the College, the bust of Rev. President Walker.	
	The Trustees of the late Hon. Samuel Appleton, presented property, valued at $50,000—for the purpose of erecting a Chapel for the use of the University, ...	50,000 00
1855	Hon. Samuel B. Wolcott, presented two bonds of the Philadelphia and Reading Railroad—the income thereof, to be appropriated for Scholarships; called "Wolcott Scholarships," .	2,000 00
	The Class of 1835, subscribed to found Scholarships, . . .	490 00
	Hon. J. J. Appleton, left in the "safe-keeping of the College," a portrait of Rev. Nathaniel Appleton; also, a portrait, the wife of Rev. N. Appleton, both by Copley.	
	The late James Brown, Esq., bequeathed to the Library, books in the department of Natural History, amounting to, . .	5,000 00
	Mrs. Susan J. Davis, presented a collection of Classical Works, the property of her late son, Thomas K. Davis.	
1856	Hon. Jared Sparks, presented a portrait of Franklin, the donation of Joshua Bates, Esq., of London.	
	William T. Andrews, Esq., Treasurer of the College, presented to increase the fund belonging to the "Plummer Professorship," the sum of, ...	2,500 00
	An "Anonymous" donation was made to the "Plummer Professorship," of, ...	3,000 00
	Several gentlemen contributed toward increasing the Mineralogical Cabinet, the sum of, ...	1,720 00
	J. S. Warren, Esq., in accordance with the wishes of his late father, gave an original portrait of Dr. Franklin.	
	His Majesty, King of Hanover, presented to the Library, two medals of silver and bronze.	
	Uriah A. Boyden, Esq., gave, for Mathematical Prizes, the sum of, ...	600 00
	Col. Benjamin Loring, and other gentlemen, purchased the Library of Prof. Locke, of Gottingen, and presented the same to the Divinity School, (cost $1,900,)	1,900 00
	The Class of 1835, subscribed to found Scholarships, . .	430 00
	Dr. Henry B. Wales, bequeathed his fine Library to the College; and also, the income of his property after it shall come into possession of the College, for the support of a teacher in the Sanscrit Language, &c.	
	Thomas Lee, Esq., presented property amounting to $10,030—the income thereof, to be paid to Prof. J. Wyman Hersey, professor of Anatomy, ...	10,030 00
	A new fence was erected around the Botanical Garden at Cambridge, being the subscription of several gentlemen, amounting to the sum of, ...	1,050 00
	Dr. George Hayward, presented an original portrait of the late Dr. Greenwood.	
	Amount carried forward, ...	$1,023,748 74

Date.		Dollars.
	Amount brought forward, ...	$1,023,748 74
1857	Hon. Francis C. Gray, bequeathed his valuable collection of engravings; and also, $1,000—for keeping the same in order, &c. The engravings, valued at $30,000, ...	1,000 00
	Hon. Samuel Hoar, bequeathed to the "Theological School," .	1,000 00
	The Society for Promoting Theological Education, has agreed to sustain two new Professorships in the Divinity School, one of Ecclesiastical History, and one of Systematic Theology, by the payment of $600 annually, to each Professor for six years.	
	Mrs. E. W. Haven, of Portsmouth, presented to the Library more than 700 volumes belonging to her late husband, N. Haven, Jr.; and also, coins and medals.	
	Subscriptions have been obtained by Prof. Cooke, and others, for building a Museum, to be united with the Boylston Fund, for that purpose, amount of subscription added to the Boylston Fund is, ...	17,000 00
	William Pickman, Esq., bequeathed to "the President and Fellows of Harvard College," the sum of, ...	3 000 00
	George W. Wales, Esq., directed the works of his brother, Dr. H. B. Wales, to be bound, and cases to secure the same, to be prepared at his own expense.	
	William T. Andrews, Esq., presented a further sum for the "Plummer Professorship," amounting to, ...	2,500 00
1858	Thomas W. Ward, Esq., bequeathed to the College the sum of $5,000—the income to be expended annually for the purchase of books, ...	5,000 00
	The Executors of the late Thomas Dowse, gave for the construction of a Botanical Conservatory at Cambridge, the sum of,	2,000 00
	Mrs. L. L. Waterhouse, presented the bust of her late husband, D. W. Waterhouse; also, a number of volumes from his Library.	
	Professor J. P. Cook, Jr., gave the Baptismal Font of Stone, in front of the Chancel of the Appleton Chapel.	
	An Anonymous donation was presented through Dr. Huntington, for building a Gymnasium at Cambridge, amounting to,	8,000 00
	Several gentlemen presented to the Library, the bust of Hon. Charles Sumner.	
	John C. Gray, Esq., presented for Mathematical prizes, . .	500 00
	Hon. Stephen Salisbury, presented to the Library the sum of $5,000—the income to be applied to the purchase of books in Greek and Latin and in other languages, ...	5,000 00
	William Gray, Esq., as residuary legatee of his uncle, Hon. F. C. Gray, gave the sum of $15,000—the income to be expended in keeping the collection of engravings given by him in order, and in publishing a catalogue of the same, . . .	15,000 00
	William Gray, Esq., as residuary legatee of his uncle, Hon. F. C. Gray, gave the sum of 50,000—the income to be expended in establishing and maintaining a Museum of Comparative Zoölogy at Cambridge, ...	50,000 00
	Total, ...	$1,133,748 74

P. S. Since making up this account, the College has received a bequest, made by the late Abbott Lawrence, of $50,000, to be added to the sum, given in his lifetime for scientific purposes; also, a bequest of Miss Mary Osgood, for the purchase of books. The bequest of Leonard Jarvis, referred to in Table V., has been received.

TABLE III.

REAL ESTATE GIVEN AT VARIOUS PERIODS BY INDIVIDUALS AND THE TOWN OF CAMBRIDGE TO HARVARD COLLEGE.

Date.		Acres.
1638	Town of Cambridge gave 2⅔ acres of land, ...	2⅔
1645	Mr. John Buckley gave part of a garden containing about 1 acre and a rood, ...	1
1646	Israel Stoughton gave 200 acres, on the northeast side of Neponset, about Mother Brook, ...	200
	and 100 acres on Blue Hill side, ...	100
	Rev. Nathaniel Ward gave 600 acres, ...	600
	Major R. Sedgwick, two small shops in Boston.	
1649	Mathew Day, part of a garden of which Mr. John Buckley gave his share in 1645, ...	
	Town of Cambridge gave a farm, at Shawshin (now Billerica,) 100 acres, ...	100
	to which Henry Dunster added 100 acres, ...	100
1652	Robert Cook gave to the college a grant from the General Court of 800 acres, which were never obtained.	
	John Coggan gave a parcel of marsh land, lying in Rumney Marsh,	70
1656	John Hayward gave 30 acres, lying in Watertown, ...	30
1660	Rev. Ezekiel Rogers gave the reversion of his house and lands, which were sold, and a farm at Waltham, purchased, called Rogers farm, which produced, in 1835 $5,000.	
	Henry Webb gave his house and land which he purchased of H. Phillips, formerly owned by S. Oliver.	
1662	The town of Cambridge, 3 acres, ...	3
1664	Town of Cambridge gave 30 acres of land and three commons, .	30
1672	Richard Champney gave 40 acres, more or less, near the falls on Charles River, ...	40
	John Haywood gave his house-lot at Watertown, 24 acres. . .	24
1678	Rev. Daniel Russell bequeathed 1000 acres at Winter Harbor, of which the College never obtained possession.	
1681	Samuel Ward gave Ward's Island.	
	Edward Jackson, 400 acres, ...	400
1683	Town of Cambridge, 20 acres and three commons in Lexington, .	20
1689	Do. in Cambridge Rocks, in the 1st division, 12 acres, . . .	12
	2d " lot 36, 12 acres, . .	12
1695	Theodore Atkinson gave a piece of land at southward of Boston, about 20 rods. (*Not obtained.*)	
1696	Samuel Sewall and wife gave 500 acres, at Petaquamscot, . .	500
1702	William Stoughton gave 23 acres of land in Dorchester, and salt meadow, ...	23
1707	Town of Cambridge, Cambridge Rocks, lot 66, 7¼ acres, . .	7¼
	" 77, 1¾ " . . .	1¾
	" 12, 7¼ " . . .	7¼
1718	Proprietors of the town of Rutland, in Boston, gave 250 acres, .	250
1724	Town of Cambridge, 3 acres, ...	3
1731	Samuel Brown gave his estate purchased of Eleazer, Giles 200 acres; also, stock belonging to his farm, ...	200
	Isaac Royall gave 2,120 acres, or thereabout, ...	2,120
	Thomas Pownall gave 500 acres, for founding a Professorship of Political Law, for which nothing was realized.	
1801	Samuel Shapleigh bequeathed all his real estate.	
1814	Samuel Parkman gave a township of land in Maine, sold for $5,000.	
1820	Thomas Cary bequeathed his real and personal estate.	
1826	C. Gore bequeathed all his real estate after certain legacies.	
1841	Henry Lienow bequeathed a portion of his real and personal estate.	
	Total, ...	4,857$\frac{5}{12}$

TABLE IV.

CONDITION OF THE COLLEGE PROPERTY, AUGUST 31ST, 1859.

The Treasurer's Report for 1860, exhibits the state of the Productive Property, August 31st, 1859—other than College Grounds, Building, Library, Cabinet, &c.

Notes and Mortgages,	$576,687 52
Bonds,	38,000 00
Bank Stock,	33,860 75
Manufacturing Stock,	58,580 00
Appleton Chapel Fund,	50,370 00
Railroad Stock,	10,000 00
Annuities,	4,794 44
Real Estate—(other than University site and buildings,)	182,101 04
Sundry Investments,	64,854 07
Gray Fund for Zoölogical Museum and Engravings,	65,000 00
Balances,	16,707 85
Total,	$1,095,905 67

The foregoing Property is answerable for the following purposes:—

For Academic Department,	$209,488 71
For Scholarships,	33,269 34
For Special Professorships.	312,448 95
For Library,	26,818 11
For Theological School,	103,267 62
For Law School and Boarding Establishment,	53,093 79
For Scientific School,	82,925 20
For Medical School,	28,404 12
For Observatory,	109,251 36
For Special, (Annuities, Chapel, Engravings, &c.,)	66,736 36
For Zoölogical Museum,	50,412 74
For Objects not connected,	19,788 37
Total,	$1,095,905 67

TABLE V.

LEGACIES AND DONATIONS TO BE RECEIVED.

Date.		Dollars.
	To the gifts already recorded, may be added the following donations which have been made to the College, but are not yet received, being made payable at a future day:—	
1841	The bequest of the late Benjamin Bussey of the remainder of his whole estate, one half of which is to be applied to the maintenance of a Manual Labor School upon his estate in Roxbury, and the other half is to be divided into equal parts, for the benefit of the Law School and the Theological School, connected with the College. The whole estate now amounts to about,	$320,000 00
1845	The bequest of John Parker, Jr., Esq., for the education of boys who show uncommon talent, whether before or after the period of entering College, and giving them the most thorough instruction in the branch of knowledge for which they are peculiarly qualified,	50,000 00
1855	Hon. Josiah Quincy, guarantees during his life, the sum of $600 per annum, and after his decease the principal sum of $10,000—the income is to be applied to publishing the "Annals of the Observatory."	
1856	The late Leonard Jarvis, Esq., of Baltimore, bequeathed "one half part of lot in Baltimore"—(will net about $14,000.)	
1859	William Gray, Esq., has signified his intention of paying $5,000 per annum, for five years, ($25,000,) for puchasing books for the Library.	
	Total,	$370,000 00

LAWS, RULES, AND SCHOLASTIC FORMS.

ESTABLISHED BY PRESIDENT DUNSTER.

Statuta, Leges, Privilegia, et Ordinationes, per Inspectores et Præsidem Collegii Harvardini constitutæ An. Chr. 1642, 1643, 1644, 1645, 1646, *et promulgatæ ad scholarium salutem et disciplinam perpetuò conservandam.*

1. Cuicunque fuerit peritia legendi Ciceronem aut quemvis alium ejusmodi classicum authorem ex tempore, et congruè loquendi ac scribendi Latinè facultas oratione tam solutâ quam ligatâ, suo, ut aiunt, Marte, et ad unguem inflectendi Græcorum nominum verborumque paradigmata; hic admissionem in Collegium jure potest expectare. Quicunque verò destitutus fuerit hac peritiâ, admissionem sibi neutiquam vendicet.

2. Considerato unusquisque ultimum finem vitæ ac studiorum, cognitionem nimirum Dei et Jesu Christi, quæ est vita æterna. Joh. xvii. 3.

3. Cum Deus sapientiæ sit largitor, privatis precibus sapientiam ab eo singuli ardenter petunto. Prov. ii. 2, 3, &c.

4. In Sacris Scripturis legendis bis quotidie unusquisque se exerceto; quo paratus ac peritus sit rationem reddendi suorum profectuum, tam in theoreticis philologicis observationibus, quam in spiritualibus practicis documentis, quemadmodum tutores requirent pro suo cujusque captu, quum "aditus verbi illuminat." Psal. cxix. 130.

5. In publico sanctorum cœtu omnes gestus, qui contemptum aut neglectum præ se ferunt sacrarum institutionum, studiosè cavento, atque ad rationem tutoribus reddendam quid profecerint parati sunto; omnibusque legitimis sibi scientiam reponendi mediis utuntor, prout à suo quisque tutore institutus fuerit.

6. Omnem profanationem Sacrosancti Dei nominis, attributorum, verbi, institutionum ac temporum cultûs, evitanto; Deum autem et ejus veritatem in notitiâ retinere, summâ cum reverentiâ et timore, studento.

7. Honore prosequuntor, ut parentes, ita magistratus, presbyteros, tutores, suosque omnes seniores, prout ratio postulat; coram illis tacentes nisi interrogati, nec quicquam contradicentes, eis exhibentes honoris et reverentiæ indicia quæcunque laudabili usu recepta sunt, incurvato nimirum corpore salutantes, aperto capite adstantes, &c.

8. Ad loquendum tardi sunto; evitent non solum juramenta, mendacia, et incertos rumores, sed et stultiloquium, scurrilitatem, futilitatem, lasciviam, omnesque gestus molestos.

9. Nequis se intrudat vel rebus alienis immisceat.

10. Dum hic egerint, tempus studiosè redimunto, tam communes omnium scholarium horas, quam suis prælectionibus destinatas, observando; prælectionibus autem diligenter attendunto, nec voce nec gestu molesti. Siquid dubitent, sodales suos, aut (nondum exempto scrupulo) tutores modestè consulunto.

11. Nequis sub quovis prætextu hominum, quorum perditi sunt ac discincti mores, consuetudine seu familiaritate utitor. Neque licebit ulli, nisi potestate ab Inspectoribus Collegii factá, bellicis lustrationibus interesse. Nemo in pupillari statu degens, nisi concessâ priùs à tutore veniâ, ex oppido exeat; nec quisquam, cujuscunque gradûs aut ordinis fuerit, forum frequentet, vel diutius in aliquâ oppidi plateâ moretur, aut tabernas, cauponas, vel diversoria ad commessandum aut bibendum accedat, nisi ad parentes, curatores, nutricios, vel hujusmodi, accersitus fuerit.

12. Nullus scholaris quicquam, quod sex denarios valeat, nullo parentum, curatorum, aut tutorum approbante, emito, vendito, aut commutato. Quum autem secus fecerit, à Præside pro delicti ratione multabitur.

13. Scholares vernaculâ linguâ intra Collegii limites nullo prætextu utuntor, nisi ad orationem aut aliud aliquod exercitium publicum Anglicè habendum evocati fuerint.

14. Siquis scholarium à precibus aut prælectionibus abfuerit, nisi necessitate coactus aut tutoris nactus veniam, admonitioni aut aliusmodi pro Præsidis prudentiæ pœnæ, si plus quam semel in hebdomade peccaverit, erit obnoxius.

15. Scholarium quisque donec primo gradu ornetur, ni sit commensalis, aut nobilis alicujus filius, aut militis primogenitus, suo tantum cognomine vocator.

16. Nullus scholaris quâvis de causâ (nisi præmonstratâ et approbatâ Præsidi vel tutori suo) à suis studiis statisve exercitiis abesto, exceptâ horâ jentaculo, semihorâ merendæ, prandio verò sesquihorâ, pariter et cœnæ concessâ.

17. Siquis scholarium ullam Dei et hujus Collegii legem, sive animo perverso, seu ex supinâ negligentiâ, violârit, postquam feurit bis admonitus, si non adultus, virgis coëreeatur, sin adultus, ad Inspectores Collegii deferendus erit, ut publicè in eum pro meritis animadversio fiat; in atrocioribus autem delictis, ut adeò gradatim procedatur, nemo expectet, nec ut admonitio iterata super eâdem lege necessario fiat.

18. Quicunque scholaris, probatione habitâ, poterit sacras utriusque instrumenti Scripturas de textu originali Latinè interpretari et logicè resolvere, fueritque naturalis et moralis philosophiæ principiis imbutus, vitâque ac moribus inculpatus, et publicis quibusvis comitiis ab Inspectoribus et Præside Collegii approbatus, primo suo gradu possit ornari.

19. Quicunque scholaris scriptam synopsin vel compendium logicæ, naturalis ac moralis philosophiæ, arithmeticæ, geometriæ, et astronomiæ exhibuerit, fuerique ad theses suas defendendas paratus, nec non originalium ut supra dictum est linguarum peritus, quem etiamnum morum integritas ac studiorum diligentia cohonestaverint, publicis quibusvis comitiis probatione factâ, secundi gradûs, magisterii nimirum, capax erit.

The Laws, Liberties, and Orders of Harvard College, confirmed by the Overseers and President of the College in the years 1642, 1643, 1644, 1645, *and* 1646, *and published to the Scholars for the perpetual preservation of their welfare and government.*

1. When any scholar is able to read Tully, or such like classical Latin author *extempore*, and make and speak true Latin in verse and prose *suo* (*ut aiunt*) *Marte*, and decline perfectly the paradigms of nouns and verbs in the Greek tongue, then may he be admitted into the College, nor shall any claim admission before such qualifications.

2. Every one shall consider the main end of his life and studies, to know God and Jesus Christ, which is eternal life. John xvii. 3.

3. Seeing the Lord giveth wisdom, every one shall seriously, by prayer in secret, seek wisdom of Him. Proverbs ii. 2, 3, &c.

4. Every one shall so exercise himself in reading the Scriptures twice a day, that they be ready to give an account of their proficiency therein, both in theoretical observations of language and logic, and in practical and spiritual truths, as their Tutor shall require, according to their several abilities respectively, seeing the entrance of the word giveth light, &c. Psalm cxix. 130.

5. In the public church assembly, they shall carefully shun all gestures that show any contempt or neglect of God's ordinances, and be ready to give an account to their Tutors of their profiting, and to use the helps of storing themselves with knowledge, as their Tutors shall direct them. And all Sophisters and Bachelors (until themselves make common place) shall publicly repeat sermons in the Hall, whenever they are called forth.

6. They shall eschew all profanation of God's holy name, attributes, word, ordinances, and times of worship; and study, with reverence and love, carefully to retain God and his truth in their minds.

7. They shall honor as their parents, magistrates, elders, tutors, and aged persons, by being silent in their presence (except they be called on to answer), not gainsaying; showing all those laudable expressions of honor and reverence in their presence that are in use, as bowing before them, standing uncovered, or the like.

8. They shall be slow to speak, and eschew not only oaths, lies, and uncertain rumors, but likewise all idle, foolish, bitter scoffing, frothy, wanton words, and offensive gestures.

9. None shall pragmatically intrude or intermeddle in other men's affairs.

10. During their residence they shall studiously redeem their time, observe the generally hours appointed for all the scholars, and the special hour for their own lecture, and then diligently attend the lectures, without any disturbance by word or gesture; and, if of any thing they doubt, they shall inquire of their fellows, or in case of non-resolution, modestly of their Tutors.

11. None shall, under any pretence whatsoever, frequent the company and society of such men as lead an ungirt and dissolute life. Neither shall any, without license of the Overseers of the College, be of the artillery or trainband. Nor shall any, without the license of the Overseers of the College, his Tutor's leave, or, in his absence, the call of parents or guardians, go out to another town.

12. No scholar shall buy, sell, or exchange any thing, to the value of sixpence, without the allowance of his parents, guardians, or Tutor's; and whosoever is found to have sold or bought any such things without acquainting their tutors or parents, shall forfeit the value of the commodity, or the restoring of it, according to the discretion of the President.

13. The scholars shall never use their mother tongue, except that in public exercises of oratory, or such like, they be called to make them in English.

14. If any scholar, being in health, shall be absent from prayers or lectures, except in case of urgent necessity, or by the leave of his Tutor, he shall be liable to admonition (or such punishment as the President shall think meet), if he offend above once a week.

15. Every scholar shall be called by his surname only, till he be invested with his first degree, except he be a fellow commoner, or knight's eldest son, or of superior nobility.

16. No scholar shall, under any pretence of recreation or other cause whatever (unless foreshowed and allowed by the President or his Tutor), be absent from his studies or appointed exercises, above an hour at morning bever, half an hour at afternoon bever, an hour and a half at dinner, and so long at supper.

17. If any scholar shall transgress any of the laws of God, or the House, out of perverseness, or apparent negligence, after twice admonition, he shall be liable, if not *adultus*, to correction; if *adultus*, his name shall be given up to the Overseers of the College, that he may be publicly dealt with after the desert of his fault; but in greater offences such gradual proceeding shall not be exercised.

18. Every scholar, that on proof is found able to read the original of the Old and New Testament into the Latin tongue, and to resolve them logically, withal being of honest life and conversation, and at any public act hath the approbation of the Overseers and Master of the College, may be invested with his first degree.

19. Every scholar, that giveth up in writing a synopsis or summary of Logic, Natural and Moral Philosophy, Arithmetic, Geometry, and Astronomy, and is ready to defend his theses or positions, withal skilled in the originals as aforesaid, and still continues honest and studious, at any public act after trial he shall be capable of the second degree, of Master of Arts.

IN SCHOLARIBUS ADMITTENDIS.

1. Præbebis omnimodam debitam reverentiam honorandis magistratibus ac reverendis Presbyteris et Præsidi Collegii unà cum Sociis singulis.

2. Debitam diligentiam studiis incumbendo adhibebis, studiis inquam linguarum et artium liberalium, obsequendo tutori tuo et salutaribus ejus præceptis, quamdiu in statu pupillari versatus fueris in hoc Collegio.

3. Religiosè in te suscipies curam, dum hic commoraberis, observandi singulas salutares leges, statuta, et privilegia hujus societatis quantum in te situm est; atque etiam, ut observentur ab omnibus hujus Collegii membris in singulo uniuscujusque munere, fideliter curabis.

4. Sedulò prospicies nequid detrimenti Collegium capiat, quantum in te situm est, sive in ejus sumptibus, sive in ædificio et structurâ, fundis, proventibus, cæterisque omnibus, quæ nunc ad Collegium pertinent, aut, dum hic egeris, pertinere possunt.

Quod ad nos, Præsidem et Socios scilicet, spectat, pollicemur nos tibi non defuturos quibuscunque nostrâ intererit; imo verò in studiis tuis et pietate progressum, quantum in nobis fuerit, promovebimus.

SOCIIS ADMITTENDIS.

1. Præbebis omnimodam debitam reverentiam honorandis magistratibus ac reverendis Presbyteris et Præsidi, Collegii Inspectoribus.

2. Religiosè in te suscipies curam, dum hic commoraberis, observandi singulas salutares leges, statuta, et privilegia hujus societatis, quantum in te situm est, atque etiam, ut observentur ab omnibus hujus Collegii membris in singulo uniuscujusque munere.

3. Omnes et singulos studentes, qui tutelæ tuæ committuntur aut in posterum committendi sunt, ut promoveas in omni tam divinâ quam humanâ literaturâ, pro suo cujusque captu, atque, ut moribus honestè et inculpatè se gerant, summopere curabis.

4. Sedulo prospicies, nequid detrimenti Collegium capiat, quantum in te situm est, sive in ejus sumptibus, sive in ædificio et structurâ, fundis, proventibus, cæterisque omnibus, quæ nunc ad Collegium pertinent, aut, dum hic egeris, pertinere possint.

Quod etiam ad nos (Collegii Inspectores) spectat, pollicemur nos non tibi defuturos esse, quibuscunque tuâ intererit; imo verò te confirmabimus authoritate ac potestate nostrâ in omnibus tuis legitimis administrationibus, contra quoscunque contumaces. Et pro Collegii facultatibus erogabimus tibi idonea stipendia (i. e. pro modulo nostro), quæ sufficiant ad victum et amictum et literaturam tuam promovendam.

PRÆSENTATIO BACCALAUREORUM.

Honorandi viri, vosque, reverendi Presbyteri, præsento vobis hosce juvenes, quos scio tam doctrinâ quam moribus idoneos esse ad primum in artibus gradum suscipiendum pro more Academiarum in Angliâ.

ADMISSIO.

Admitto te ad primum gradum in artibus, scil. ad respondendum quæstioni pro more Academiarum in Angliâ, tibique trado hunc librum unà cum potestate publicè prælegendi (in aliquâ artium, quam profiteris) quotiescunque ad hoc munus evocatus fueris.

PRÆSENTATIO MAGISTRORUM.

Honorandi viri, vosque, reverendi Presbyteri, præsento vobis hosce viros, quos scio tam doctrinâ quam moribus esse idoneos ad incipiendum in artibus pro more Academiarum in Angliâ.

ADMISSIO INCEPTORUM.

Admitto te ad secundum gradum in artibus pro more Academiarum in Angliâ; tibique trado hunc librum unà cum potestate publicè profitendi, ubicunque ad hoc munus publicè evocatus fueris.

FORMULA PUBLICÆ CONFESSIONIS.

Ego, S. W., qui à cultu divino in aulâ Collegii tam matutino quam vespertino toties per aliquot menses abfui (in quâ absentâ monitis et aliis in me animadversionum gradibus non obstantibus hactenus perstiti), nunc culpam meam agnosco, et publicæ agnitionis hoc testimonio me reum profiteor, et majorem in his exercitiis pietatis diligentiam in posterum (Deo volente), dum hic egero, polliceor.

CERTIFICATE FOR AN UNDERGRADUATE.

Per integrum biennium quo apud nos pupillari statu commoratus est A. B., Collegii Harvardini Cantabrigiæ in Nov-Angliâ alumnus, publicas lectiones tam philologicas quam philosophicas audivit, necnon declamationibus, disputationibus, cæterisque exercitiis, pro sui temporis ratione adeò incubuit, ut nobis certam spem fecerit illum suis coætaneis etiam in aliis collegiis (si admissus fuerit) non disparem fore. Quapropter hoc de illo testimonium omnibus, quorum interesse possit, perhibemus nos, quorum nomina subscripta sunt.

Datum.

CERTIFICATE FOR A BACHELOR OF ARTS.

Per integrum illud tempus quo apud nos commoratus est C. D. Collegii Harvardini Cantabrigiæ in Nov-Angliâ alumnus, et in artibus liberalibus Baccalaureus, bonarum literarum studiis vitæ probitatem adjunxit; adeò ut nobis spem amplam fecerit se in Ecclesiæ et Reipublicæ commodum victurum. Quapropter hoc de illo testimonium omnibus, quorum interesse possit, perhibemus nos, quorum nomina subscripta sunt.

Datum.

CERTIFICATE FOR A MASTER OF ARTS.

Per integrum illud tempus quo apud nos commoratus est E. F., Collegii Harvardini Cantabrigiæ in Nov-Angliâ alumnus, et in artibus liberalibus Magister, bonarum literarum studiis sedulò incubuit, sinceram veræ fidei professionem inculpatis suæ vitæ moribus exornavit, adeò ut nobis certam et amplam spem fecerit se in Ecclesiæ et Reipublicæ commodum victurum. Quapropter hoc de illo testimonium omnibus, quorum interesse possit, perhibemus nos, quorum nomina subscripta sunt.

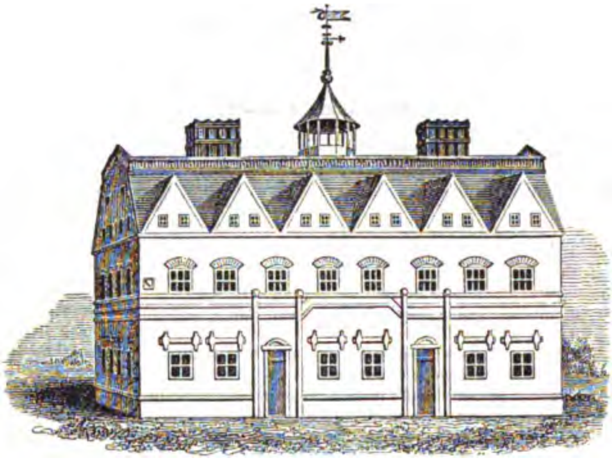
Datum.

BACCALAUREORUM PRÆSENTATIO.

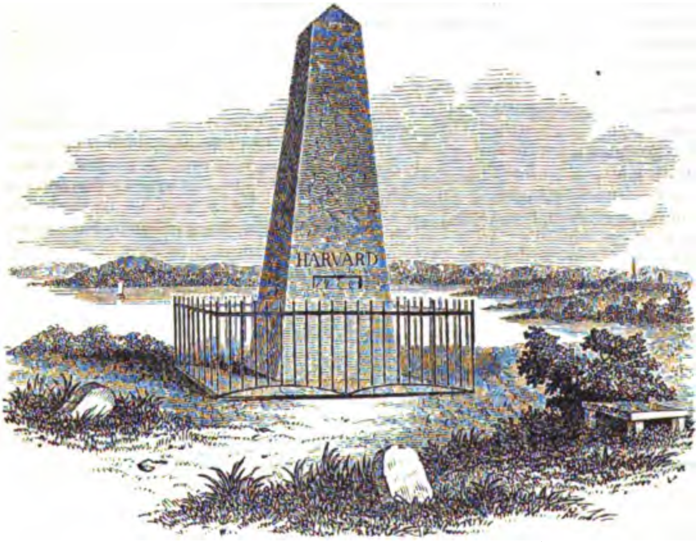
Supplicat Reverentiis vestris A. B., ut quadriennium ab admissione completum, quo ordinarias lectiones audiverit unà cum disputationibus, declamationibus, cæterisque exercitiis per statuta Col. requisitis (licet non omnino secundum formam statuti), sufficiat ei ad primum gradum in artibus suscipiendum.

MAG. PRÆSENTATIO IN ANGL.

Supplicat Reverentiis vestris N. N., ut novem termini completi post finalem ejus determinationem, in quibus ordinarias lectiones audiverit (licet non omnino secundum formam statuti) unà cum omnibus oppositionibus, responsionibus, declamationibus, cæterisque exercitiis per statuta regia requisitis, sufficiant ei ad incipiendum in artibus.



FIRST HARVARD HALL.



MONUMENT TO HARVARD, ON BURIAL HILL, IN CHARLESTOWN

VII. SCHOOL OF MINES

AT

FREYBERG, SAXONY.

This celebrated school is one of the richest mining districts of Saxony, and the proximity of the mines permits an easy combination of practice with theory. Its first object is to furnish educated young men for the corps of mines of the kingdom, but it also admits strangers to its courses at a trifling expense for their instruction, the pupils boarding in the town.

General government. The school of mines is under the immediate government of the directory of mines (oberbergamt,) and is thus a branch of the ministry of finance. The professors form a board for the execution of the general regulations, and one of them is specially charged by the directory with the superintendence of the instruction of discipline.

Admission. Applications for free admission to the institution are made to the directory of mines, and must be accompanied by certificates that the applicant is between sixteen and twenty-three years of age, is of good moral character, in sound health, writes German correctly, and understands the grammar of the language; has made some proficiency in geography and history, can read easy Latin authors, is acquainted with arithmetic, the elements of geometry, and has made a beginning in drawing. If he understands the French or English language, it is a recommendation. The testimonials must be handed between the months of January and June, and the directory decide which of the applicants may present themselves for examination before the professors of the school. Those found qualified in all the courses enter, and others may, in particular cases, be allowed to join the classes, undergoing subsequently an examination in the studies in which they were defective. According to an edict of the German diet, in regard to the attendance of foreigners upon the scholastic institutions of any of the German states, strangers must apply to the minister of finance for permission to attend the school and present a testimonial of character and proficiency, and the written expression of their parents' wish that they should attend the school. Admission is, however, freely granted. Those pupils who are in part, or entirely, supported by the goverment, are divided into two classes. The first division includes the regular students, called beneficiaries (beneficianteu,) who pass through a course of four years at the school, and become candidates for the corps of mines; the other is composed of those who enter for places not requiring more than one or two years of study, or who have passed a superior examination for admission, but can not enter as regular students, in consequence of the want of a vacancy in the corps. Besides these there are two other divisions, namely, Saxons, who pay their own expenses at the school, and foreigners. These different divisions are distinguished by characteristic differences in the uniform which they wear. The gratuitously educated students come under an obligation at entering, in event of leaving the service of the government, to refund the pay which they may have received, and to pay the cost of their tuition. The regular pupils receive a pay proportioned in general to the length of time which they have been in the school. The first class receives from twenty-two to thirty dollars per annum; the second, from fifteen to twenty-two; the third, from seven to fifteen. The fourth class receive only the compensation to which they may be entitled for their work in the mines.

Instruction. The courses of instruction are divided into those which are to be pursued by all the pupils, or general, and those which depend upon the branch to which they intend devoting themselves, or special. The first consist of elementary, higher, and applied or mixed mathematics, mechanics and the machinery of mines, general, analytical, and special or technical chemistry, physics, drawing, general and topographical, of shades, shadows, and perspective, and of mining implements, of mining and metallurgic machines and constructions, oryctognosy (mineralogy,) geognosy (geology,) crystallography the art of mining, metallurgy, civil engineering, mining jurisprudence and correspondence, the French language. The second of special courses consist of the surveying of mines and land surveying, the keeping of books, registers, &c., of fossil geology, for those who are intended as miners, and of the examination of minerals, and analytical chemistry, with special reference to the ores of Saxony, for those who are to serve at the furnaces.

These courses are pursued by the regular students according to the following plan:—The first year is devoted to elementary mathematics, to physics, to geognosy, to general and topographical drawing, to French, and to general practical operations of mining and metallurgy. All these pupils are allowed at certain times to be present in the mines and at the furnaces, under the charge of miners and smeltors, who act as instructors, and who report at the end of the year upon the character of their pupils.

During the second year the courses pursued are—higher mathematics, general chemistry, mineralogy, with practical exercises, crystallography, the art of mining, civil engineering, drawing, French, practical mining, and geological exercises.

After this year the student determines whether he will devote himself to mining or metallurgy, and receives special instruction accordingly.

The general courses of the third year are—applied mathematics, the art of mining, analytical chemistry, metallurgy, technical chemistry, drawing, practical exercises in mining and metallurgy, geology, with practical exercises, and fossil geology.

The courses of the fourth year are—machinery of mines, theory and practice, mining jurisprudence, examination of minerals, analytical chemistry, and practical exercises of mining and metallurgy. During this year, the pupils who intend devoting themselves specially to mining attend solely to practice in that branch, and thus also with the metallurgists. The particular operation in which they engage is regulated by the lectures, that the practice of each operation may be acquired at the same time with its theory.

In relation to the amount of study to be pursued, the government pupils are divided into three classes, those who aim at entire qualification for the corps, and who, on graduating at the school, go to the university for one year, and those who intend to connect themselves with the department of metallurgy.

Among the apparatus for carrying out these courses is an admirable collection of models of machines and of mines. The collection of minerals and geological specimens is large, and besides that of the school, the students have the use of the cabinet of the celebrated Werner, which is kept detached from the other as a memorial of that great man. The library and reading-room, the collection of physical and chemical apparatus, and the arrangements for the study of analytical chemistry, and the assay of minerals and ores, are all suitable to their several objects. The course of assaying with the blow-pipe has become quite celebrated.

The lectures are continued from October to July, with holidays of from one to two weeks at Christmas, Easter, and Whitsuntide. During the summer vacations, the regular pupils make excursions into the other mining districts of Saxony, and even into foreign countries, for their improvement in mining, geology, &c., and are expected to keep a journal of their tours. The short vacations are employed at the school in practical exercises and in literary compositions, unless leave of absence is obtained. There is also one day of each week on which there are no lessons, (Monday,) to allow the pupils to take part both in the mining and smelting operations of the district of Freyberg.

There are eight professors and five teachers attached to the school, among whom the different departments are divided according to the following plan, in which the number of lectures per week is also noted:—One professor has charge of the three departments of general and technical chemistry and of metallurgy, lecturing on the first, five hours; on the second, three hours; and on the third, three hours. The professor of theoretical and practical mineralogy lectures on the theory for students of the first and second courses, each three times a week; gives a repetition of one hour, and practical exercises two hours per week. The professor of geology and crystallography lectures on the first, five hours, and on the second, two hours per week. The professor of physics and fossil geology lectures on the first, four hours, and on the second, two hours per week. The professor of the elementary and higher mathematics gives instruction in the first, four hours, and in the second, two hours per week. The professor of mining jurisprudence and correspondence gives two lessons per week to each of his two classes. Mixed mathematics, mining machinery, and general surveying, are under one professor, who teaches the first and second, four hours, and the third two hours per week. Mining surveying is taught by a surveyor of the corps two hours per week. Drawing and civil architecture by an instructor, the former, six hours, and the latter, three hours per week. Registry is taught by a superintendent of mines. The assay of minerals by an overviewer, five hours per week. The teacher of French gives four hours of instruction per week.

The subjects are in general taught by lectures, combined with interrogation after each lecture, and, when the courses admit, with practical exercises. The pupils are expected to write out a fair copy of their notes, and to keep a journal of their practical exercises; these are from time to time, with the essays which they are directed to write, submitted to the professors, and are presented at the examinations. The subject of each recitation, the character of the pupils' answers, and of the exercises, drawings, and journals, are reported to the directory of mines by the professors. At the close of each of the four years there is an examination of the students in the several branches, and they are classified according to its results, and the estimate of their work during the year. Students who do not pass satisfactorily, remain an additional year in the same class, after which, if they are not found proficient, they are dismissed. These remarks apply of course only to the regular students. There are three prizes for proficiency in the upper classes, and two in the fourth, varying in amount from two up to twenty florins, (eighty cents to eight dollars.)

Graduation. Graduates of the school are candidates for the corps of mines, and receive the pay of this grade until appointed in the corps. Permission may be obtained to go to a university for one year, after graduating, in which case the candidate, on his return to duty, must show satisfactory certificates of study and conduct. This study of one year at a university is essential to certain situations in the corps, and hence is expected from those who intend to have the whole career open before them.

Discipline. The discipline of the school is regulated by laws emanating from the directory of mines, and which are very minute. All the pupils without distinction, are subject to these regulations. The means of repressive discipline consist of admonitions of various grades, report to the directory, mention in the report to the king, obligatory work in the mines, deprivation of pay, and dismission.

This school, from the character of its officers, government, instruction, and location, offers great inducements to students who wish to become adepts in the principles of mining and metallurgy, and the sciences introductory to them.

VIII. NORMAL SCHOOL

FOR THE TRAINING OF PAROCHIAL SCHOOLMASTERS,

AT BATTERSEA, ENGLAND.

THE Battersea Training Establishment is the most interesting institution in England for the professional education of teachers. It was founded in 1839, by James Phillips Kay* (now Sir James Kay Shuttleworth), Secretary of the Committee of Council on Education, and E. C. Tufnel, Esq., Assistant Poor-Law Commissioner, with two distinguishing objects:—

> 1. To give an example of normal education for schoolmasters, comprising the formation of character, the development of the intelligence, appropriate technical instruction, and the acquisition of method and practical skill in conducting an elementary school.
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> 2. To illustrate the truth that, without violating the rights of conscience, masters trained in a spirit of Christian charity, and instructed in the discipline and doctrines of the Church, might be employed in the mixed schools necessarily connected with public establishments, and in which children of persons of all shades of religious opinion are assembled.

It was founded as a private enterprise, and at an expense of $12,000 to the individuals named, in the hope that it might be employed, if the experiment should prove successful, by the Government, in supplying teachers for schools of industry for pauper children, like those at Norwood, Manchester, Liverpool, and elsewhere; for reformatory institutions for juvenile criminals; for "ragged schools" for neglected and vagrant children in large cities; and for schools of royal foundation at dock-yards and in men-of-war. The original constitution impressed upon the normal school was conceived in this view. But, in 1843, the institution, having proved successful, and it being no longer convenient for its founders personally to superintend its operations, was transferred to the management of the National Society, for the purpose of being also instrumental in spreading a truly Christian civilization through the masses of the people in manufacturing districts. In announcing this fact, the founders, in their Report in 1843, remark:—

> Our personal experience had made us early acquainted with the absence of a growth in the spiritual and intellectual life of the masses, corresponding with the vast material prosperity of the manufacturing districts.
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> We had witnessed the failure of efforts to found a scheme of combined education on the emancipation of infants from the slavery into which the necessities and ignorance of their parents, and the intensity of commercial competition, had sold them.
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> To arrest the progress of degeneracy toward materialism and sensuality, appeared to us to be the task most worthy of citizens in a nation threatened by corruption from the consequences of ignorance and excessive labor among her lower orders.
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> It is impossible that the legislature should, year after year, receive and publish such accounts of the condition of the people as are contained in the Reports

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* Mr. Kay in 1843 assumed the name of Shuttleworth, in consequence of receiving a legacy from a person of that name; and in 1849 was knighted by the queen, for his services to the cause of elementary instruction.

of the Hand-loom Weavers' Commission, or of the Commission on the Employment of Women and Children, or that on the Dwellings of the Poor and on the Sanitary Condition of Large Towns, without resolving to confer on the poor some great reward of patience, by offering national security for their future welfare.

These considerations have a general relation, but the state of the manufacturing poor is that which awakens the greatest apprehension. The labor which they undergo is excessive, and they sacrifice their wives and infants to the claims of their poverty, and to the demands of the intense competition of trade. Almost every thing around them tends to materialize and inflame them.

They are assembled in masses,—they are exposed to the physical evils arising from the neglect of sanitary precautions, and to the moral contamination of towns,—they are accustomed to combine in trades-unions and political associations,—they are more accessible by agitators, and more readily excited by them.

The time for inquiry into their condition is past, the period for the interference of a sagacious national forethought is at hand. We therefore felt that the imminent risks attending this condition of the manufacturing poor established the largest claim on an institution founded to educate Christian teachers for the people.

No material change has been made in the plan of the school in consequence of this transfer of management, or enlargement of the design; and the history of its establishment and original constitution will therefore be both appropriate and profitable to an understanding of its present operations. The following account is drawn from the "*First and Second Reports on the Training School at Battersea, to the Poor-Law Commissioners*," published in a volume entitled "Reports on the Training of Pauper Children. 1841."

The training of pauper children in a workhouse or district school cannot be successful unless the teacher be moved by Christian charity to the work of rearing in religion and industry the outcast and orphan children of our rural and city population. The difficulty of redeeming by education the mischief wrought in generations of a vicious parentage, can be estimated only by those who know how degenerate these children are.

The pauper children assembled at Norwood, from the garrets, cellars, and wretched rooms of alleys and courts in the dense parts of London, are often sent thither in a low stage of destitution, covered only with rags and vermin; often the victims of chronic disease; almost universally stunted in their growth; and sometimes emaciated with want. The low-browed and inexpressive physiognomy or malign aspect of the boys is a true index to the mental darkness, the stubborn tempers, the hopeless spirits, and the vicious habits on which the master has to work. He needs no small support from Christian faith and charity for the successful prosecution of such a labor; and no quality can compensate for the want of that spirit of self-sacrifice and tender concern for the well-being of these children, without which their instruction would be any thing but a labor of love. A baker, or a shoemaker, or a shop apprentice, or commercial clerk, cannot be expected to be imbued with this spirit, during a residence of six months in the neighborhood of a model-school, if he has not imbibed it previously at its source.

The men who undertake this work should not set about it in the spirit of hirelings, taking the speediest means to procure a maintenance with the least amount of trouble. A commercial country will always offer irresistible temptations to desert such a profession, to those to whom the annual stipend is the chief if not sole motive to exertion. The outcast must remain neglected, if there be no principle which, even in the midst of a commercial people, will enable men to devote themselves to this vocation from higher motives than the mere love of money.

Experience of the motives by which the class of schoolmasters now plying their trade in this country are commonly actuated, is a graver source of want of confidence in their ability to engage in this labor, than the absence of skill in their profession. A great number of them undertake these duties either because they are incapacitated by age or infirmity for any other, or because they have failed in all other attempts to procure a livelihood, or because, in the absence of well-qualified competitors, the least amount of exertion and talent enables the most indolent schoolmasters to present average claims on public confidence and support. Rare indeed are the examples in which skill and principle are combined in the agents employed in this most important sphere of national self-government. Other men will not enable you to restore the children of vagabonds and criminals to society, purged of the taint of their parents' vices, and prepared to perform their duties as useful citizens in an humble sphere.

The peculiarities of the character and condition of the pauper children demand the use of appropriate means for their improvement. The general principles on which the education of children of all classes should be conducted are doubtless fundamentally the same; but for each class specific modifications are requisite, not only in the methods, but in the matter of instruction.

The discipline, management, and methods of instruction in elementary schools for the poor, differ widely from those which ought to characterize schools for the middle or upper classes of society. The instruction of the blind, of the deaf and dumb, of criminals, of paupers, and of children in towns and in rural districts, renders necessary the use of a variety of distinct methods in order to attain the desired end.

The peculiarity of the pauper child's condition is, that his parents, either from misfortune, or indolence, or vice, have sunk into destitution. In many instances children descend from generations of paupers. They have been born in the worst purlieus of a great city, or in the most wretched hovels on the parish waste. They have suffered privation of every kind. Perhaps they have wandered about the country in beggary, or have been taught the arts of petty thieving in the towns. They have lived with brutal and cruel men and women, and have suffered from their caprice and mismanagement. They have seen much of vice and wretchedness, and have known neither comfort, kindness, nor virtue.

If they are sent very young to the work-house, their entire training in religious knowledge, and in all the habits of life, devolves on the schoolmaster. If they come under his care at a later period, his task is difficult in proportion to the vicious propensities he has to encounter.

The children to whose improvement Pestalozzi devoted his life were of a similar class,—equally ignorant, and perhaps equally demoralized, in consequence of the internal discords attendant on the revolutionary wars which, at the period when his labors commenced, had left Switzerland in ruin.

The class of children which De Fellenberg placed under the charge of Vehrli at Hofwyl were in like manner picked up on the roads of the canton—they were the outcasts of Berne.

These circumstances are among the motives which led us to a careful examination of the schools of industry and normal schools of the cantons of Switzerland. These schools are more or less under the influence of the lessons which Pestalozzi and De Fellenberg have taught that country. They differ in some important particulars from those which exist in England, and the experience of Switzerland in this peculiar department of elementary instruction appears pre-eminently worthy of attention.

These orphan and normal schools of Switzerland, which have paid the deference due to the lessons of Pestalozzi and De Fellenberg, are remarkable for the gentleness and simplicity of the intercourse between the scholar and his master. The formation of character is always kept in mind as the great aim of education. The intelligence is enlightened, in order that it may inform the conscience, and that the conscience, looking forth through this intelligence, may behold a wider sphere of duty, and have at its command a greater capacity for action. The capacity for action is determined by the cultivation of habits appropriate to the duties of the station which the child must occupy.

Among the laboring class, no habit is more essential to virtuous conduct than that of steady and persevering labor. Manual skill connects the intelligence with the brute force with which we are endued. The instruction in elementary schools should be so conducted as not only to assist the laborer in acquiring mechanical dexterity, but in bringing his intelligence to aid the labors of his hands, whether by a knowledge of the principles of form or numbers, or of the properties of natural objects, and the nature of the phenomena by which his labors are likely to be affected. In a commercial country, it is pre-eminently important to give him such an acquaintance with geography as may stimulate enterprise at home, or may tend to swell the stream of colonization which is daily extending the dominion of British commerce and civilization. Labor which brings the sweat upon the brows requires relaxation, and the child should therefore learn to repose from toil among innocent enjoyments, and to avoid those vicious indulgences which waste the laborer's strength, rob his house of comfort, and must sooner or later be the source of sorrow. There is a dignity in the lot of man in every sphere, if it be not cast away. The honor and the joy of successful toil should fill the laborer's songs in his hour of repose. From religion man learns that all the artificial distinctions of society are as nothing before that God who searcheth the heart. Religion, therefore, raises the laborer to the highest dignity of human existence, the knowledge of the will and the enjoyment of the favor of God. Instructed by religion, the laborer knows how in daily toil he fulfills the duties and satisfies the moral and natural necessities of his existence, while the outward garb of mortality is gradually wearing off, and the spirit preparing for emancipation.

An education guided by the principles described in this brief sketch, appears to us appropriate to the preparation of the outcast and orphan children for the great work of a Christian's life. * * *

That which seemed most important was the preparation of a class of teachers, who would cheerfully devote themselves, and, with anxious and tender solicitude, to rear these children, abandoned by all natural sympathies, as a wise and affectionate parent would prepare them for the duties of life.

To so grave a task as an attempt to devise the means of training these teachers, it was necessary to bring a patient and humble spirit, in order that the results of experience in this department might be examined, and that none that were useful might be hastily thrown aside. Our examination of the Continental schools was undertaken with this view. A visit was made to Holland at two successive periods, on the last of which we took one of Dr. Kay's most experienced schoolmasters with us, in order that he might improve himself by an examination of the methods of instruction in the Dutch schools, all the most remarkable of which were minutely inspected. A visit has been paid to Prussia and Saxony, in which several of the chief schools have been examined with a similar design. Two visits were paid to Paris, in which the normal school at Versailles, the Maison Mère, and Novitiate of the Brothers of the Order of the Christian Doctrine, and a great number of the elementary schools of Paris and the vicinity, were examined. The normal school at Dijon was especially recommended to our attention by M. Cousin and M. Villemain, and we spent a day in that school. Our attention was directed with peculiar interest to the schools of Switzerland, in the examination of which we spent several weeks uninterruptedly. During this period we daily inspected one or more schools, and conversed with the authorities of the several cantons, with the directors of the normal schools, and with individuals distinguished by their knowledge of the science of elementary instruction. The occasional leave of absence from our home duties which you have kindly granted us in the last three years respectively, was mainly solicited with the view, and devoted to the purpose, of examining the method of instruction adopted in the schools for the poorer classes on the Continent.

This report is not intended to convey to you the results of our inquiries. It may suffice to describe the chief places visited, and the objects to which our attention was directed, in order that you may know the sources whence we have derived the information by which our subsequent labors have been guided. We entered Switzerland by the Jura, descending at Geneva, and, having obtained the sanction of the authorities, were accompanied by some members of the council in our visit to the schools of the town and neighborhood. Thence we proceeded to the Canton de Vaud, inspecting certain rural schools, and the schools of the towns on the borders of the lake, on our way to Lausanne. Here we spent two days, in company with M. Gauthey, the director of the normal school of the canton, whose valuable report has been translated by Sir John Boileau, our fellow-traveler in this part of our journey.

At Lausanne we attended the lectures, and examined the classes in the normal school and the town schools, and enjoyed much useful and instructive conversation with M. Gauthey, who appeared eminently well qualified for his important labors.

At Fribourg we spent some time in the convent of the Capuchin friars, where we found the venerable Père Girard officiating at a religious festival, but he belongs to the Dominican order. The Père Girard has a European reputation among those who have labored to raise the elementary instruction of the poorer classes, consequent on his pious labors among the poor of Fribourg; and the success of his schools appeared to us chiefly attributable,—first, to the skill and assiduity with which the monitors had been instructed in the evening by the father and his assistants, by which they had been raised to the level of the pupil teachers of Holland; and secondly, to the skillful manner in which Père Girard and his assistants had infused a moral lesson into every incident of the instruction, and had bent the whole force of their minds to the formation of the characters of the children. It was, at the period of our visit, the intention of Père Girard to publish a series of works of elementary instruction at Paris, for which we have since waited in vain.

At Berne, we spent much time in conversation with M. De Fellenberg, at Hofwyl. We visited his great establishment for education there, as well as the normal school at Munchen Buchsee, in which visit we were accompanied by M. De Fellenberg. What we learned from the conversation of this patriotic and high-minded man we cannot find space here to say. His words are better read in the establishments which he has founded, and which he superintends, and in the influence which his example and his precepts have had on the rest of Switzerland, and on other parts of Europe. The town schools of Berne and other parts of the canton merited, and received our attention.

At Lucerne we carefully examined the normal and orphan schools. Thence we proceeded through Schweitz, with the intention of visiting the colony of the Linth, in Glarus, but failed, from the state of the mountain roads. Crossing the Lake of Zurich at Rapperschwyl, we successively visited St. Gall and Appenzell, examining some of the most interesting orphan schools in the mountains, particularly one kept by a pupil of De Fellenberg at Teuffen, the normal school at Gais (Kruisi, the director of which is a pupil of Pestalozzi), and the orphan school of M. Zeltveger at Appenzell.

Descending from the mountains, we crossed the lake to Constance, where we found Vehrli, who had many years conducted the poor-school of De Fellenberg at Hofwyl, now in charge of the normal school of the canton of Thurgovia, in a large mansion once connected with the convent of Kruitzlingen. Here we spent two days in constant communication with Vehrli and his pupils, in the examination of his classes, and deriving from him much information respecting his labors. From Constance we traveled to Zurich, where we carefully examined the normal and model schools, both at that time considerably shaken by the recent revolution.

At Lenzberg we had much useful conversation with the director of the normal school of the canton of Aargovia; thence we traveled to Basle, where we visited the orphan house of the town, and also that at Beuggen, as well as other schools of repute.

We have ventured to give this sketch of our journey in Switzerland, as some apology for the strength of the opinion we have formed on the necessity which exists for the establishment of a training school for the teachers of pauper children in this country. Our inquiries were not confined to this object; but both here, at Paris, in Holland, and in Germany, we bought every book which we thought might be useful in our future labors; and in every canton we were careful to collect all the laws relating to education, the regulations of the normal and elementary schools, and the by-laws by which these institutions were governed.

In the orphan schools which have emanated from Pestalozzi and De Fellenberg, we found the type which has assisted us in our subsequent labors. In walking with M. De Fellenberg through Hofwyl, we listened to the precepts which we think most applicable to the education of the pauper class. In the normal school of the canton of Thurgovia, and in the orphan schools of St. Gall and Appenzell, we found the development of those principles so far successful as to assure us of their practical utility. * * *

We were anxious that a work of such importance should be undertaken by the authorities most competent to carry it into execution successfully, and we painfully felt how inadequate our own resources and experience were for the management of such an experiment; but after various inquiries, which were attended with few encouraging results, we thought that as a last resort we should not incur the charge of presumption, if, in private and unaided, we endeavored to work out the first steps of the establishment of an institution for the training of teachers, which we hoped might afterward be intrusted to abler hands. We determined, therefore, to devote a certain portion of our own means to this object, believing that when the scheme of the institution was sufficiently mature to enable us to speak of results rather than of anticipations, the well-being of 50,000 pauper children would plead its own cause with the government and the public, so as to secure the future prosperity of the establishment.

The task proposed was, to reconcile a simplicity of life not remote from the habits of the humbler classes, with such proficiency in intellectual attainments, such a knowledge of method, and such skill in the art of teaching, as would enable the pupils selected to become efficient masters of elementary schools. We hoped to inspire them with a large sympathy for their own class; to implant in their minds the thought that their chief honor would be to aid in rescuing that class from the misery of ignorance and its attendant vices; to wean them from the influence of that personal competition in a commercial society which leads to sordid aims; to place before them the unsatisfied want of the uneasy and distressed multitude; and to breathe into them the charity which seeks to heal its mental and moral diseases.

We were led to select premises at Battersea, chiefly on account of the very frank and cordial welcome with which the suggestion of our plans was received by the Hon. and Rev. Robert Eden, the vicar of Battersea. Mr. Eden offered the use of his village schools in aid of the training school, as the sphere in which the pupils might obtain a practical acquaintance with the art of instruction. He also undertook to superintend the training school in all that related to religion.

We therefore chose a spacious manor-house close to the Thames, surrounded by a garden of five acres. This house was altered and divided so as to afford a good separate residence to Dr. Kay,* who undertook to superintend the progress of the establishment for a limited period, within which it was hoped that the principles on which the training school was to be conducted would be so far developed as to be in course of prosperous execution, and not likely to perish by being confided to other hands.

In the month of January, 1840, the class-rooms were fitted up with desks on the plan described on the minutes of the Committee of Council, and we furnished the school-house. About the beginning of February some boys were removed from the School of Industry at Norwood, whose conduct had given us confidence in their characters, and who had made a certain proficiency in the elementary instruction of that school.

These boys were chiefly orphans, of little more than thirteen years of age, intended to form a class of apprentices. These apprentices would be bound from the age of fourteen to that of twenty-one, to pursue, under the guidance and direction of the Poor-Law Commission, the vocation of assistant teachers in elementary schools. For this purpose they were to receive instruction at least three years in the training school, and to be employed as pupil teachers for two years at least in the Battersea village school during three hours of every day.

At the termination of this probationary period (if they were able satisfactorily to pass a certain examination) they were to receive a certificate, and to be employed as assistant teachers, under the guidance of experienced and well-conducted masters, in some of the schools of industry for pauper children. They were at this period to be rewarded with a certain remuneration, increasing from year to year, and secured to them by the form of the indenture.

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* For which he paid half the rent and taxes, in addition to his share of the expenses of the school.

If they were unable to satisfy the examiners of their proficiency in every department of elementary instruction, and thus failed in obtaining their certificate, they would continue to receive instruction at Battersea until they had acquired the requisite accomplishments.

The number of pupil teachers of this class has been gradually increased, during the period which has since elapsed, to twenty-four. But it seemed essential to the success of the school that the numbers should increase slowly. Its existence was disclosed only to the immediate circles of our acquaintance, by whom some boys were sent to the school, besides those whom we supported at our own expense. For the clothing, board and lodging, and education of each of these boys, who were confided to our care by certain of our friends, we consented to receive £20 per annum toward the general expenses of the schools.

Besides the class of pupil teachers, we consented to receive young men, to remain at least one year in the establishment, either recommended by our personal friends, or to be trained for the schools of gentlemen with whom we were acquainted. These young men have generally been from twenty to thirty years of age.

The course of instruction, and the nature of the discipline adopted for the training of these young men, will be described in detail. This class now amounts to nine, a number accumulated only by very gradual accessions, as we were by no means desirous to attract many students until our plans were more mature, and the instruments of our labor were tried and approved.

The domestic arrangements were conducted with great simplicity, because it was desirable that the pupils should be prepared for a life of self-denial. A sphere of great usefulness might require the labors of a man ready to live among the peasantry on their own level,—to mingle with them in their habitations,—to partake their frugal or even coarse meals,—and to seem their equal only, though their instructor and guide. It was desirable, therefore, that the diet should be as frugal as was consistent with constant activity of mind, and some hours of steady and vigorous labor, and that it should not pamper the appetite by its quality or its variety.

The whole household-work was committed to the charge of the boys and young men; and for this purpose the duties of each were appointed every fortnight, in order that they might be equally shared by all. The young men above twenty years of age did not aid in the scouring of the floors and stairs, nor clean the shoes, grates, and yards, nor assist in the serving and waiting at meals, the preparation of vegetables and other garden-stuff for the cook. But the making of beds and all other domestic duty was a common lot; and the young men acted as superintendents of the other work.

This was performed with cheerfulness, though it was some time before the requisite skill was attained; and perfect order and cleanliness have been found among the habits most difficult to secure. The pupils and students were carefully informed, that these arrangements were intended to prepare them for the discharge of serious duties in an humble sphere, and to nerve their minds for the trials and vicissitudes of life.

The masters partook the same diet as the pupils, sitting in the center of the room, and assisting in the carving. They encouraged familiar conversation (avoiding the extremes of levity or seriousness) at the meals, but on equal terms with their scholars, with the exception only of the respect involuntarily paid them.

After a short time a cow was bought, and committed to the charge of one of the elder boys. Three pigs were afterward added to the stock, then three goats, and subsequently poultry and a second cow. These animals were all fed and tended, and the cows were daily milked, by the pupil teachers. It seemed important that they should learn to tend animals with care and gentleness; that they should understand the habits and the mode of managing these particular animals, because the schoolmaster in a rural parish often has a common or forest-right of pasture for his cow, and a forest-run for his pig or goat, and might thus, with a little skill, be provided with the means of healthful occupation in his hours of leisure, and of providing for the comfort of his family.

Moreover, such employments were deemed important, as giving the pupils, by actual experience, some knowledge of a peasant's life, and, therefore, truer and closer sympathy with his lot. They would be able to render their teaching instructive, by adapting it to the actual condition and associations of those to whom it would be addressed. They would be in less danger of despising the laborer's daily toil in comparison with intellectual pursuits, and of being led by their own attainments to form a false estimate of their position in relation to the class to which they belonged, and which they were destined to instruct. The teacher of the peasant's child occupies, as it were, the father's place, in the performance of duties from which the father is separated by his daily toil, and unhappily, at present, by his want of knowledge and skill. But the schoolmaster ought to be prepared in thought and feeling to do the peasant-father's duty, by having sentiments in common with him, and among these an honest pride in the labor of his hands, in his strength, his manual skill, his robust health, and the manly vigor of his body and mind.

At first, four hours were devoted every day to labor in the garden. The whole school rose at half past five. The household-work occupied the pupil teachers altogether, and the students partially, till a quarter to seven o'clock. At a quarter to seven they marched into the garden, and worked till a quarter to eight, when they were summoned to prayers. They then marched to the tool-house, deposited their implements, washed, and assembled at prayers at eight o'clock. At half past eight they breakfasted. From nine to twelve they were in school. They worked at the garden from twelve to one, when they dined. They resumed their labor in the garden at two, and returned to their classes at three, where they were engaged till five, when they worked another hour in the garden. At six they supped, and spent from seven to nine in their classes. At nine, evening prayers were read, and immediately afterward they retired to rest. * * *

In these labors the pupils and students rapidly gained strength. They almost all soon wore the hue of health. Their food was frugal, and they returned to it with appetites which were not easily satisfied. The most delicate soon lost all their ailments. * * *

The gymnastic frame and the horizontal and parallel bars were not erected until the constitutional and muscular powers of the pupils and students had been invigorated by labor. After a few months' daily work in the garden, the drill was substituted for garden-work during one hour daily. The marching exercise and extension movements were practiced for several weeks; then the gymnastic apparatus was erected, and the drill and gymnastic exercise succeeded each other on alternate evenings. The knowledge of the marching exercise is very useful in enabling a teacher to secure precision and order in the movements of the classes, or of his entire school, and to pay a due regard to the carriage of each child. A slouching gait is at least a sign of vulgarity, if it be not a proof of careless habits—of an inattention to the decencies and proprieties of life, which in other matters occasion discomfort in the laborer's household. Habits of cleanliness, punctuality, and promptitude are not very compatible with indolence, nor with that careless lounging which frequently squanders not only the laborer's time, but his means, and leads his awkward steps to the village tavern. In giving the child an erect and manly gait, a firm and regular step, precision and rapidity in his movements, promptitude in obedience to commands, and particularly neatness in his apparel and person, we are insensibly laying the foundation of moral habits, most intimately connected with the personal comfort and the happiness of the future laborer's family. We are giving a practical moral lesson, perhaps more powerful than the precepts which are inculcated by words. Those who are accustomed to the management of large schools know of how much importance such lessons are to the establishment of that order and quiet which is the characteristic of the Dutch schools, and which is essential to great success in large schools.

The gymnastic exercises were intended, in like manner, to prepare the teachers to superintend the exercises and amusements of the school play-ground; to instruct the children systematically in those graduated trials of strength, activity, and adroitness, by which the muscles are developed and the frame is prepared for sustaining prolonged or sudden efforts. The play-ground of the school is so important a means of separating the children from the vicious companions and evil example of the street or lane, and of prolonging the moral influence of the master over the habits and thoughts of his scholars, that expedients which increase its attractions are important, and especially those which enable the master to mingle with his scholars usefully and cheerfully. The schools of the Canton de Vaud are generally furnished with the proper apparatus for this purpose, and we frequently observed it in France and Germany.

The physical training of our charge was not confined to these labors and exercises. Occasionally Dr. Kay accompanied them in long walking excursions into the country, in which they spent the whole day in visiting some distant school, or remarkable building connected with historical associations, or some scene replete with other forms of instruction. In those excursions their habits of observation were cultivated, their attention was directed to what was most remarkable, and to such facts and objects as might have escaped observation from their comparative obscurity. Their strength was taxed by the length of the excursion, as far as was deemed prudent; and after their return home they were requested to write an account of what they had seen, in order to afford evidence of the nature of the impressions which the excursion had produced.

Such excursions usefully interrupted the ordinary routine of the school, and afforded a pleasing variety in the intercourse between ourselves and the teachers and pupils. They spurred the physical activity of the students, and taught them habits of endurance, as they seldom returned without being considerably fatigued.

Such excursions are common to the best normal schools of Switzerland. It is very evident to the educators of Switzerland that to neglect to take their pupils forth to read the great truths left on record on every side of them in the extraordinary features of that country, would betray an indifference to nature, and to its influence on the development of the human intelligence, proving that the educator had most limited views of his mission, and of the means by which its high purposes were to be accomplished.

The great natural records of Switzerland, and its historical recollections, abound with subjects for instructive commentary, of which the professors of the normal schools avail themselves in their autumnal excursions with their pupils. The natural features of the country; its drainage, soils, agriculture; the causes which have affected the settlement of its inhabitants and its institutions; the circumstances which have assisted in the formation of the national character, and have thus made the history of their country, are more clearly apprehended by lessons gathered in the presence of facts typical of other facts scattered over hill and valley. England is so rich in historical recollections, and in the monuments by which the former periods of her history are linked with the present time, that it would seem to be a not unimportant duty of the educator to avail himself of such facts as lie within the range of his observation, in order that the historical knowledge of his scholar may be associated with these records, marking the progress of civilization in his native country. Few schools are placed beyond the reach of such means of instruction. Where they do not exist, the country must present some natural features worthy of being perused. These should not be neglected. In book-learning there is always a danger that the thing signified may not be discerned through the sign. The child may acquire words instead of thoughts. To have a clear and earnest conviction of the reality of the things signified, the object of the child's instruction should as frequently as possible be brought under its eye. Thus, Pestalozzi was careful to devise lessons on objects in which, by actual contact with the sense, the children were led to discern qualities which they afterward described in words. Such lessons have no meaning to persons who are satisfied with instruction by rote.

The excursions of the directors of the Swiss normal schools also serve the purpose of breaking for a time an almost conventual seclusion, which forms a characteristic of establishments in which the education of the habits, as well as the instruction of the intelligence, is kept in view. These excursions in Switzerland extend to several days, and even longer, in schools of the more wealthy classes. The pupils are thus thrown in contact with actual society; their resources are taxed by the incidents of each day; their moral qualities are sometimes tried, and they obtain a glimpse of the perspective of their future life. It is not only important in this way to know what the condition of society is before the pupil is required to enter it, but it is also necessary to keep constantly before his eye the end and aim of education—that it is a preparation for the duties of his future life, and to understand in what respect each department of his studies is adapted to prepare him for the actual performance of those duties. For each class of society there is an appropriate education. The normal schools of Switzerland are founded on this principle. None are admitted who are not devoted to the vocation of masters of elementary schools. The three or four years of their residence in the school are considered all too short for a complete preparation for these functions. The time, therefore, is consumed in appropriate studies, care being taken that these studies are so conducted as to discipline and develop the intelligence; to form habits of thought and action; and to inspire the pupil with principles on which he may repose in the discharge of his duties.

Among these studies and objects, the actual condition of the laboring class, its necessities, resources, and intelligence, form a most important element. The teachers go forth to observe for themselves; they come back to receive further instruction from their master. They are led to anticipate their own relations to the commune or parish in which their future school will be placed. They are prepared by instruction to fulfill certain of the communal duties which may usefully devolve upon them; such as registrar, precentor, or leader of the church choir, and clerk to the associations of the village. They receive familiar expositions of the law affecting the fulfillment of these duties.

The benefits derived from these arrangements are great; not only in furnishing these rural communes with men competent to the discharge of their duties, but the anticipations of future utility, and the conviction that their present studies infold the germ of their future life, give an interest to their pursuits, which it would be difficult to communicate, if the sense of their importance were more vague and indistinct.

To this end, in the excursions from Battersea we have been careful to enter the schools on our route, and lessons have been given on the duties attaching to the offices which may be properly discharged by a village schoolmaster, in connection with his duty of instructing the young.

This general sketch may suffice to give an idea of the external relations of the life of a student in the training school, with the important exception of that portion of his time devoted to the acquirement of a practical knowledge of the duties of a schoolmaster in the village school. This may be more conveniently considered in connection with the intellectual pursuits of the school. We now proceed to regard the school as a *household*, and to give a brief sketch of its familiar relations.

The most obvious truth lay at the threshold—a family can only subsist harmoniously by mutual love confidence, and respect. We did not seek to put the tutors into situations of inaccessible authority, but to place them in the parental seat, to receive the willing respect and obedience of their pupils, and to act as the elder brothers of the young men. The residence of one of us for a certain period, in near connection with them, appeared necessary to give that tone to the familiar intercourse which would enable the tutors to conduct the instruction, and to maintain the discipline, so as to be at once the friends and guides of their charge.

It was desirable that the tutors should reside in the house. They rose at the same hours with the scholars (except when prevented by sickness), and superintended more or less the general routine. Since the numbers have become greater, and the duties more laborious, it has been found necessary that the superintendence of the periods of labor should be committed to each tutor alternately. They have set the example in working, frequently giving assistance in the severest labor, or that which was least attractive.

In the autumn, some extensive alterations of the premises were to a large extent effected by the assistance of the entire school. The tutors not only superintended, but assisted in the work. Mr. Tate contributed his mechanical knowledge, and Mr. Horne assisted in the execution of the details. In the cheerful industry displayed on this and on other similar occasions, we have witnessed with satisfaction one of the best fruits of the discipline of the school. The conceit of the pedagogue is not likely to arise among either students or masters who cheerfully handle the trowel, the saw, or carry mortar in a hod to the top of the building; such simplicity of life is not very consistent with that vanity which occasions insincerity. But freedom from this vice is essential to that harmonious interchange of kind offices and mutual respect which we were anxious to preserve.

The diet of the household is simple. The fruits and vegetables of the garden afford the chief variety, without luxury. The teachers sit in the midst of their scholars. The familiar intercourse of the meals is intended to be a means of cultivating kindly affections, and of insuring that the example of the master shall insensibly form the habits of the scholar. Every day confirms the growing importance of these arrangements.

It has been an object of especial care that the morning and evening prayers should be conducted with solemnity. A hall has been prepared for this service, which is conducted at seven o'clock every morning in that place. A passage of Scripture having been read, a portion of a psalm is chanted, or they sing a hymn; and prayers follow, generally from the family selection prepared by the Bishop of London. The evening service is conducted in a similar manner. The solemnity of the music, which is performed in four parts, is an important means of rendering the family devotion impressive. We trust that the benefits derived from these services may not be transient, but that the masters reared in this school will remember the household devotions, and will maintain in their own dwellings and schools the family rite with equal care.

Quiet has been enjoined on the pupils in retiring to rest.

The Sunday has been partially occupied by its appropriate studies. The services of the church have been attended morning and evening; and, besides a certain period devoted to the study of the formularies, the evening has been spent in writing out from memory a copious abstract of one of the sermons. At eight o'clock these compositions have been read and commented upon in the presence of the whole school; and a most useful opportunity has been afforded for religious instruction, besides the daily instruction in the Bible. Mr. Eden has likewise attended the school on Friday, and examined the classes in their acquaintance with the Holy Scriptures and formularies of the church. The religious department, generally, is under his superintendence.

The household and external life of the school are so interwoven with the lessons, that it becomes necessary to consider some of their details together, before the intellectual instruction is separately treated.

With pupils and students alike, it was found necessary to commence at an early stage of instruction, and to furnish them with the humblest elements of knowledge. The time which has elapsed since the school has opened ought, therefore, to be regarded as a preparatory period, similar to that which, in Germany, is spent from the time of leaving the primary school to sixteen, the period of entering the normal school, in what is called a preparatory training school.

As such preparatory schools do not exist in this country, we had no alternative. We selected the boys of the most promising character, and determined to wade through the period of preparation, and ultimately to create a preparatory class in the school itself. Our design was to examine the pupils of this class at the end of the first year, and to grant to such of them as gave proof of a certain degree of proficiency a certificate as *Candidates* of the training school. At the end of the second year's course of instruction, it is intended that a second examination shall occur, in which proficients may obtain the certificate of *Scholar;* and at the close of the ordinary course, in the third year, another examination is to be held, in which the certificate of *Master* will be conferred on those who have attained a certain rank intellectually, and who support their claims by a correct moral deportment.

Training schools, developed on this design, would therefore consist of—

1. Preparatory classes of students and pupils. 2. A class of Candidates. 3. A class of Scholars. And some students, who had obtained the certificate of Master, might remain in the school in preparation for special duties as the Mas-

ters of important *district schools*, or as Tutors in other training schools. These students would constitute—4. A class of Masters.

As soon as the attainments of the students and pupils appeared to warrant the experiment, an hour was daily appropriated to examination by means of questions written on the board before the class, the replies to which were worked on paper, in silence, in the presence of one of the tutors. This hour is, on successive days of the week, appropriated to different subjects, viz.: grammar, etymology, arithmetic, mensuration, algebra, mechanics, geography, and biblical knowledge. The examination papers are then carefully examined by the tutor to whose department they belong, in order that the value of the reply to each question may be determined in reference to mean numbers, 3, 4, 5, and 6. These mean numbers are used to express the comparative difficulty of every question, and the greatest merit of each reply is expressed by the numbers 6, 8, and 10 and 12 respectively, the lowest degree of merit being indicated by 1.

The sum of the numbers thus attached to each answer is entered in the examination-book, opposite to the name of each pupil. These numbers are added up at the end of the week, and reduced to an average by dividing them by the number of days of examination which have occurred in the week. In a similar manner, at the end of the month, the sum of the weekly averages is, for the sake of convenience, reduced by dividing them by four; and a convenient number is thus obtained, expressing the intellectual progress of each boy. These numbers are not published in the school, but are reserved as an element by which we may be enabled to award the certificates of Candidate, Scholar, and Master.

The examination for the quarterly certificates will necessarily also include the inspection of the writing, drawings, abstracts, and compositions. Oral examination will be required to ascertain the degree of promptitude and ease in expression of each pupil. They will likewise be required to give demonstrations of problems in arithmetic, algebra, and mechanics, on the blackboard; to describe the geography of a district in the form of a lecture, and to conduct a class before us, ere we award the certificates.

The examination of the pupils will gradually rise in importance, and the quarterly examinations will be marked by a progressive character, leading to the three chief examinations for the certificates of Candidate, Scholar, and Master, which will be distinguished from each other, both as respects the nature and number of the acquirements, and by the degree of proficiency required in some branches which will be common to the three periods of study.

In another department of registration we have thought it important to avoid certain errors of principle to which such registers appear to be liable. We have been anxious to have a record of some parts of moral conduct connected with habits formed in the school, but we have not attempted to register *moral merit*. Such registers are at best very difficult to keep. They occasion rivalry, and often hypocrisy. On this account we did not deem it advisable to require that they should be kept; but it was important that we should be informed of certain errors interfering with the formation of habits of punctuality, industry, cleanliness, order, and subordination; and registers were devised for noting deviations from propriety in these respects. First, a *time-book* is directed to be kept, in which the observance of the hour of rising, and of the successive periods marked in the routine of the school is noted, in order that any general cause of aberration may meet the eye at once. Secondly, one book is kept by the superintendents appointed from among the students to inspect the *household work above stairs*, another in relation to the *household work below stairs*, and a third by the tutor having charge of *out-door labor*. In these books the duties assigned to each pupil are entered opposite to his name. The superintendent, at the expiration of the period allotted to the work, marks in columns under each of the following heads,—Subordination, Industry, Cleanliness, Order,—the extent of deviation from propriety of conduct by numbers varying from 1 to 4.

The register of punctuality in classes is kept by writing opposite to each pupil's name the number of minutes which elapse after the proper period before he enters the class. The sum of the numbers recorded in these books denotes the extent of errors in habits and manners into which any of the pupils fall, and directs our attention to the fact. Such records would, in connection with the results of the examinations, enable us to determine whether, in reference to each period, a certificate of *Candidate, Scholar*, or *Master*, of the *first, second*, or *third* degree, should be granted.

The reports of the superintendents are presented to Dr. Kay immediately after morning prayers. The record is read in the presence of the school, and any appeal against the entry heard. At this period the relation which the entire discipline holds to the future pursuits of the pupils is from time to time made familiar to them by simple expositions of the principles by which it is regulated. * * *

This is the *household life* of the school. Brief hints only of the principles which have determined and regulated the preparatory course can find a place in the remarks we have to offer on the preparatory course.

The students have been stimulated in their application by a constant sense of the practical utility of their intellectual labors. After morning prayers, they are from day to day reminded of the connection between their present and future pursuits, and informed how every part of the discipline and study has a direct relation to the duties of a schoolmaster. The conviction thus created becomes a powerful incentive to exertion, which might be wanting if those studies were selected only because they were important as a discipline of the mind.

The sense of practical utility seems as important to the earnestness of the student as the lively conviction attending object teaching in the early and simplest form of elementary instruction. In the earliest steps an acquaintance with the real is necessary to lively conceptions of truth, and at a later period a sense of the value of knowledge resulting from *experience* inspires the strongest conviction of the dignity and importance of all truth, where its immediate practical utility is not obvious.

Far, therefore, from fearing that the sense of the practical utility of these studies will lead the students to measure the value of all truth by a low standard, their pursuits have been regulated by the conviction, that the most certain method of attaining a strong sense of the value of truths, not readily applicable to immediate use, is to ascertain by experience the importance of those which can be readily measured by the standard of practical utility. Thus we approach the conception of the momentum of a planet moving in its orbit, from ascertaining the momentum of bodies whose weight and velocity we can measure by the simplest observations. From the level of the experience of the practical utility of certain common truths, the mind gradually ascends to the more abstract, whose importance hence becomes more easily apparent, though their present application is not obvious, and in this way the thoughts most safely approach the most difficult abstractions.

In the humble pursuits of the preparatory course, a lively sense of the utility of their studies has likewise been maintained by the method of instruction adopted. Nothing has been taught *dogmatically*, but every thing by the combination of the simplest elements, i. e. the course which a discoverer must have trod has been followed, and the way in which truths have been ascertained pointed out by a synthetical demonstration of each successive step. The labor of the previous analysis of the subject is the duty of the teacher, and is thus removed from the child.

Having ascertained what the pupil knows, the teacher endeavors to lead him by gentle and easy steps from the known to the unknown. The instruction, in the whole preparatory course, is chiefly oral, and is illustrated, as much as possible, by appeals to nature, and by demonstrations. Books are not resorted to until the teacher is convinced that the mind of his pupil is in a state of healthful activity; that there has been awakened in him a lively interest in truth, and that he has become acquainted practically with the inductive method of acquiring knowledge. At this stage the rules, the principles of which have been orally communicated, and with whose application he is familiar, are committed to memory from books, to serve as a means of recalling more readily the knowledge and skill thus attained. This course is Pestalozzian, and, it will be perceived, is the reverse of the method usually followed, which consists in giving the pupil the rule first. Experience, however, has confirmed us in the superiority of the plan we have pursued. Sometimes a book, as for example a work on Physical Geography, is put into his hands, in order that it may be carefully read, and that the student may prepare himself to give before the class a verbal abstract of the chapter selected for this purpose, and to answer such questions as may be proposed to him, either by the tutor or by his fellows. During the preparatory course exercises of this kind have not been so numerous as they will be in the more advanced stages of instruction. Until habits of attention and steady application had been formed, it seemed undesirable to allow to the pupils hours for self-sustained study, or voluntary occupation. Constant superintendence is necessary to the formation of correct habits, in these and in all other respects, in the preparatory course. The entire day is, therefore, occupied with a succession of engagements in household work and out-door labor, devotional exercises, meals, and instruction. Recreation is sought in change of employment. These changes afford such pleasure, and the sense of utility and duty is so constantly maintained, that recreation in the ordinary sense is not needed. Leisure from such occupations is never sought excepting to write a letter to a friend, or occasionally to visit some near relative. The pupils all present an air of cheerfulness. They proceed from one lesson to another, and to their several occupations, with an elasticity of mind which affords the best proof that the mental and physical effects of the training are auspicious.

In the early steps toward the formation of correct habits, it is necessary that (until the power of self-guidance is obtained) the pupil should be constantly under the eye of a master, not disposed to exercise authority so much as to give assistance and advice. Before the habit of self-direction is formed, it is therefore pernicious to leave much time at the disposal of the pupil. Proper intellectual and moral aims must be inspired, and the pupil must attain a knowledge of the mode of employing his time with skill, usefully, and under the guidance of right motives, ere he can be properly left to the spontaneous suggestions of his own mind. Here, therefore, the moral and the intellectual training are in the closest harmony. The formation of correct habits, and the growth of right sentiments, ought to precede such confidence in the pupil's powers of self-direction, as is implied in leaving him either much time unoccupied, or in which his labors are not under the immediate superintendence of his teacher.

In the preparatory course, therefore, the whole time is employed under superintendence, but toward the close of the course a gradual trial of the pupil's powers of self-guidance is commenced; first, by intrusting him with certain studies unassisted by the teacher. Those who zealously and successfully employ their time will, by degrees, be intrusted with a greater period for self-sustained intellectual or physical exertion. Further evidence of the existence of the proper qualities will lead to a more liberal confidence, until habits of application and the power of pursuing their studies successfully, and without assistance, are attained.

The subjects of the preparatory course were strictly rudimental. It will be found that the knowledge obtained in the elementary schools now in existence is a very meager preparation for the studies of a training school for teachers. Until the elementary schools are improved, it will be found necessary to go to the very roots of all knowledge, and to rearrange such knowledge as the pupils have attained, in harmony with the principles on which they must ultimately communicate it to others. Many of our pupils enter the school with the broadest provincial dialect, scarcely able to read with fluency and precision, much less with ease and expression. Some were ill furnished with the commonest rules of arithmetic, and wrote clumsily and slowly.

They have been made acquainted with the *phonic* method of teaching to read practiced in Germany. Their defects of pronunciation have been corrected to a large extent by the adoption of this method, and by means of deliberate and emphatic syllabic reading, in a well-sustained and correct tone. The principles on which the *laut* or *phonic* method depends have been explained at considerable length as a part of the course of lessons on method.

We have deemed it of paramount importance that they should acquire a thorough knowledge of the elements and structure of the English language. The lessons in reading were in the first place made the means of leading them to an examination of the structure of sentences, and practical oral lessons were given on grammar and etymology according to the method pursued by Mr. Wood in the Edinburgh Sessional School. The results of these exercises were tested by the lessons of dictation and of composition which accompanied the early stages of this course, and by which a timely sense of the utility of a knowledge of grammatical construction and of the etymological relations of words was developed. As soon as this feeling was created, the oral instruction in grammar assumed a more positive form. The theory on which the rules were founded was explained, and the several laws, when well understood, were dictated in the least exceptionable formulæ, and were written out and committed to memory. In this way they proceeded through the whole of the theory and rules of grammar before they were intrusted with any book on the subject, lest they should depend for their knowledge on a mere effort of the memory to retain a formula not well understood.

At each stage of their advance, corresponding exercises were resorted to, in order to familiarize them with the application of the rules.

When they had in this way passed through the ordinary course of grammatical instruction, they were intrusted with books to enable them to give the last degree of precision to their conceptions.

In etymology the lessons were in like manner practical and oral. They were first derived from the reading-lessons of the day, and applied to the exercises and examinations accompanying the course, and, after a certain progress had been made, their further advance was insured by systematic lessons from books.

A course of reading in English literature, by which the taste may be refined by an acquaintance with the best models of style, and with those authors whose works have exercised the most beneficial influence on the mind of this nation, has necessarily been postponed to another part of the course. It, however, forms one of the most important elements in the conception of the objects to be attained in a training school, that the teacher should be inspired with a discriminating but earnest admiration for those gifts of great minds to English literature which are alike the property of the peasant and the peer; national treasures which are among the most legitimate sources of national feelings.

Those who have had close intercourse with the laboring classes well know with what difficulty they comprehend words not of a Saxon origin, and how frequently addresses to them are unintelligible from the continual use of terms of a Latin or Greek derivation; yet the daily language of the middling and upper classes abounds with such words—many of the formularies of our church are full of them, and hardly a sermon is preached which does not in every page contain numerous examples of their use. Phrases of this sort are so naturalized in the language of the educated classes, that entirely to omit them has the appearance of pedantry and baldness, and even disgusts persons of taste and refinement. Therefore, in addressing a mixed congregation, it seems impossible to avoid using them, and the only mode of meeting the inconvenience alluded to is to instruct the humbler classes in their meaning. The method we have adopted for this purpose has been copied from that first introduced in the Edinburgh Sessional Schools; every compound word is analyzed, and the separate meaning of each member pointed out, so that, at present, there are few words in the English language which our pupils cannot thoroughly comprehend, and from their acquaintance with the common roots and principles of etymology, the new compound terms, which the demands of civilization are daily introducing, are almost immediately understood by them. We believe that there are few acquirements more conducive to clearness of thought, or that can be more usefully introduced into common schools, than a thorough knowledge of the English language, and that the absence of it gives power to the illiterate teacher and demagogue, and deprives the lettered man of his just influence.

Similar remarks might be extended to style. It is equally obvious that the educated use sentences of a construction presenting difficulties to the vulgar which are frequently almost insurmountable. It is, therefore, not only necessary that the meaning of words should be taught on a logical system in our elementary schools, but that the children should be made familiar with extracts from our best authors on subjects suited to their capacity. It cannot be permitted to remain the opprobrium of this country that its greatest minds have bequeathed their thoughts to the nation in a style at once pure and simple, but still inaccessible to the intelligence of the great body of the people.

In *writing*, they were trained, as soon as the various books could be prepared, according to the method[*] of Mulhauser, which was translated and placed in the hands of the teachers for that purpose.

In like manner, in *arithmetic*, it has been deemed desirable to put them in possession of the pre-eminently synthetical method of Pestalozzi. As soon as the requisite tables and series of lessons, analyzed to the simplest elements, could be procured, the principles on which complex numerical combinations rest were rendered familiar to them, by leading the pupils through the earlier course of Pestalozzi's lessons on numbers, from simple unity to compound fractional quantities; connecting with them the series of exercises in mental arithmetic which they are so well calculated to introduce and to illustrate. The use of such a method dispels the gloom which might attend the most expert use of the common rules of arithmetic, and which commonly afford the pupil little light to guide his steps off the beaten path illuminated by the rule.

While these lessons have been in progress, the common rules of arithmetic have been examined by the light of this method. Their theory has been explained, and by constant practice the pupils have been led to acquire expertness in them, as well as to pursue the common principles on which they rest, and to ascertain the practical range within which each rule ought to be employed. The ordinary lessons on mental arithmetic have taken their place in the course of instruction separately from the peculiar rules which belong to Pestalozzi's series.

These lessons also prepared the pupils for proceeding at an early period in a similar manner with the elements of algebra, and with practical lessons in mensuration and land-surveying.

These last subjects were considered of peculiar importance, as comprising one of the most useful industrial developments of a knowledge of the laws of number. Unless, in elementary schools, the instruction proceed beyond the knowledge of abstract rules, to their actual application to the practical necessities of life, the scholar will have little interest in his studies, because he will not perceive their importance; and moreover, when he leaves the school, they will be of little use, because he has not learned to apply his knowledge to any purpose. On this account, boys who have been educated in common elementary schools, are frequently found, in a few years after they have left, to have forgotten the greater part even of the slender amount of knowledge they had acquired.

The use of arithmetic to the carpenter, the builder, the laborer, and artisan, ought to be developed by teaching mensuration and land-surveying in elementary schools. If the scholars do not remain long enough to attain so high a range, the same principle should be applied to every step of their progress. The practical application of the simplest rules should be shown by familiar examples. As soon as the child can count, he should be made to count objects, such as money, the figures on the face of a clock, &c. When he can add, he should have before him shop-bills, accounts of the expenditure of earnings, accounts of wages. In every arithmetical rule similar useful exercises are a part of the art of a teacher, whose sincere desire is to fit his pupil for the application of his knowledge to the duties of life, the preparation for which should be always suggested to the pupil's mind as a powerful incentive to action. These future duties should be always placed in a cheering and hopeful point of view. The mere repetition of a table of numbers has less of education in it than a drill in the *balance-step*.

Practical instruction in the *book-keeping* necessary for the management of the household was for these reasons given to those who acted as stewards; accounts were kept of the seeds, manure, and garden produce, &c., as preparatory to a course of book-keeping, which will follow.

[†] The recently rapid development of the industry and commerce of this

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[*] See a description of Mulhauser's method, p. 250.

[†] It is somewhat remarkable that since this paragraph was written I should have received a letter from one of the principal directors of a railway company, in which he informs me that the frequent recurrence of accidents had induced the directors of the railway to make a careful examination into their causes. The directors rose from this inquiry convinced that these accidents were, to a large extent, attributable to the ignorance of the men whom they had been obliged to

country by machinery, creates a want for well-instructed mechanics, which, in the present state of education, it will be difficult adequately to supply. The steam-engines which drain our coal-fields and mineral veins and beds; which whirl along every railroad; which toil on the surface of every river, and issue from every estuary, are committed to the charge of men of some practical skill, but of mean education. The mental resources of the classes who are practically intrusted with the guidance of this great development of national power should not be left uncultivated. This new force has grown rapidly, in consequence of the genius of the people, and the natural resources of this island, and in spite of their ignorance. But our supremacy at sea, and our manufacturing and commercial prosperity (inseparable elements), depend on the successful progress of those arts by which our present position has been attained.

On this account, we have deemed inseparable from the education of a schoolmaster a knowledge of the *elements of mechanics* and of the laws of heat, sufficient to enable him to explain the structure of the various kinds of steam-engines in use in this country. This instruction has proved one of the chief features even of the preparatory course, as we feared that some of the young men might leave the establishment as soon as they had obtained the certificates of candidates, and we were unwilling that they should go forth without some knowledge at least of one of the chief elements of our national prosperity, or altogether without power to make the workingman acquainted with the great agent which has had more influence on the destiny of the working classes than any other single fact in our history, and which is probably destined to work still greater changes.

Knowledge and national prosperity are here in strict alliance. Not only do the arts of peace—the success of our trade—our power to compete with foreign rivals—our safety on our railways and in our steam-ships—depend on the spread of this knowledge, but the future defense of this country from foreign aggression can only result from our being superior to every nation in those arts. The schoolmaster is an agent despised at present, but whose importance for the attainment of this end will, by the results of a few years, be placed in bold relief before the public.

The tutor to whom the duty of communicating to the pupils a knowledge of the laws of motion, of the mechanical powers and contrivances, and of the laws of heat, was committed, was selected because he was a self-educated man, and was willing to avail himself of the more popular methods of demonstration, and to postpone the application of his valuable and extensive mathematical acquirements. By his assistance the pupils and students have been led through a series of demonstrations of mechanical combinations, until they were prepared to consider the several parts of the steam-engine, first separately, and in their successive developments and applications, and they are at present acquainted with the more complex combinations in the steam-engines now in use, and with the principles involved in their construction and action.

In *geography*, it has been deemed important that the tutors should proceed by a similar method. The lessons on land-surveying have familiarized the pupils with the nature and uses of maps. As one development of the art of drawing, they have been practiced in map-drawing. For this purpose, among other expedients, the walls of one class-room have been prepared with mastic, in order that bold projections of maps might be made on a great scale.

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employ as engineers, for the want of better; and to the low habits of these men, who, though they do not subject themselves to dismissal by such a defiance of regulations as to be found "*drunk*," are in the habit of stupefying themselves with dram-drinking! The directors of the company had determined that the proper remedy for these evils was to provide amusement and instruction for their men at night, and application has since been made to Mr. Tate, the tutor in mechanics, &c., in the training school, to afford his assistance in delivering lectures on mechanics to the engineers, stokers, and other servants of the company. A large room has been provided for these purposes, and it is understood to be the intention of the company to draw their servants to this room by such amusements as may be more attractive than the tavern—to excite their attention to subjects of instruction appropriate to their duties by a series of popular lectures—and then to open classes, when they may learn mechanics, and such of the elements of natural science as may be useful to them in their calling.

As a part of the amusements, application was made by one of the directors to Mr. Hullah to open a class like those of the artisans of Paris, and to instruct them in singing on the method of Wilhem.—J. P. KAY.

Physical geography has been deemed the true basis of all instruction in the geography of industry and commerce, which ought to form the chief subject of geographical instruction in elementary schools. The tutor has first endeavored to convince the pupils that nothing which presents itself to the eye in a well-drawn map is to be regarded as accidental; the boldness of the promontories, the deep indenture of the bays, the general bearings of the coast, are all referable to natural laws. In these respects the eastern and western coasts of England are in striking contrast, in appearance, character, and in the circumstances which occasion their peculiarities. The physical geography of England commences with a description of the elevation of the mountain ranges, the different levels, and the drainage of the country. The course, rapidity, and volume of the rivers are referable to the elevation and extent of the country which they drain. From the climate, levels, and drainage, with little further matter, the agricultural tracts of the country may be indicated, and when the great coal-fields and the mineral veins and beds, the depth of the bays and rivers are known, the distribution of the population is found to be in strict relation to certain natural laws. Even the ancient political divisions of the country are, on inspection, found to be in close dependence on its drainage. The counties are river basins, which were the first seats of tribes of population. If any new political distribution were to be made, it would necessarily, in like manner, be affected by some natural law, which it is equally interesting and useful to trace.

Geography, taught in this way, is a constant exercise to the reasoning powers. The pupil is led to trace the mutual dependence of facts, which, in ordinary instruction, are taught as the words of a vocabulary. Geography taught in the ordinary way is as reasonable an acquisition as the catalogue of a museum, which a student might be compelled to learn as a substitute for natural history. A catalogue of towns, rivers, bays, promontories, &c., is even less geography than the well-arranged catalogue of a museum is natural history, because the classification has a logical meaning in the latter case, which is absent in the former.

As a department of geographical instruction, the elements of the use of the globes in connection with nautical astronomy has been cultivated with some diligence.

The outlines only of the history of England have been read, as preparatory to a course of instruction in English history, which is to form one of the studies of the second year. The history of England has been read in the evening as an exercise in the art of reading, and the examinations which have followed have been adapted only to secure general impressions as to the main facts of our history.

Skill in *drawing* was deemed essential to the success of a schoolmaster. Without this art he would be unable to avail himself of the important assistance of the blackboard, on which his demonstrations of the objects of study ought to be delineated. His lessons on the most simple subjects would be wanting demonstrative power, and he would be incapable of proceeding with lessons in mechanics, without skill to delineate the machines of which his lessons treated.

The arts of design have been little cultivated among the workmen of England. Whoever has been accustomed to see the plans of houses and farm buildings, or of public buildings of an humble character from the country, must know the extreme deficiency of our workmen in this application of the art of drawing, where it is closely connected with the comfort of domestic life, and is essential to the skillful performance of public works. The survey now in progress under the Tithe Commissioners affords abundant evidence of the want of skill in map-drawing among the rural surveyors.

The improvement of our machiney for agriculture and manufactures would be in no small degree facilitated, if the art of drawing were a common acquirement among our artisans. Invention is checked by the want of skill in communicating the conception of the inventor, by drawings of all the details of his combination. In all those manufactures of which taste is a principal element, our neighbors, the French, are greatly our superiors, solely, we believe, because the eyes and the hands of all classes are practiced from a very early age in the arts of design. In the elementary schools of Paris, the proficiency of the young pupils in drawing is very remarkable, and the evening schools are filled with young men and adults of mature or even advanced age, engaged in the diligent cultivation of this art. Last Midsummer, in some of the evening schools of the Brothers of the Christian Doctrine, classes of workmen were questioned as to their employments. One was an *ébéniste*, another a founder, another a clock-maker, another a paper-hanger, another an upholsterer; and each was asked his hours of labor, and his motives for attendance. A single example may serve as a type. A man without his coat, whose muscular arms were bared by rolling his shirt-sleeves up to his shoulders, and who, though well washed and clean, wore the marks of toil on his white, horny hands, was sitting with an admirable copy in crayon of *La Donna della Segiola* before him, which he had nearly completed. He was a man about 45 years of age. He said he had risen at five, and had been at work from six o'clock in the morning until seven o'clock in the evening, with brief intervals for meals; and he had entered the evening class at eight o'clock, to remain there till ten. He had pleasure, he said, in drawing, and that a knowledge of the art greatly improved his skill and taste in masonry. He turned round with a good-humored smile, and added, he could live better on less wages than an Englishman, because his drawing cost him less than beer. Some thousand workingmen attend the adult schools every evening in Paris, and the drawing classes comprise great numbers whose skill would occasion much astonishment in this country. The most difficult engravings of the paintings of the Italian masters are copied in crayon with remarkable skill and accuracy. Complex and exquisitely minute architectural details, such, for example, as perspective views of the Duomo at Milan, or the cathedrals at Rouen or Cologne, are drawn in pen and ink, with singular fidelity. Some were drawing from plaster casts and other models. We found such adult schools in many of the chief towns of France. These schools are the sources of the taste and skill in the decorative arts, and in all manufactures of which taste is a prominent element, and which have made the designs for the calico-printers, the silk and ribbon looms, the papers, &c., &c., of France, so superior in taste to those of this country, notwithstanding the superiority of our manufactories in mechanical combinations.

These considerations lead us to account drawing an important department of elementary education. The manufacturers of Lancashire are well aware how difficult it is, from the neglect of the arts of design among the laborers of this country, to procure any skilled draftsmen to design for the cotton or silk manufacturer. The elevation of the national taste in art can only be procured by the constant cultivation of the mind in relation to the beautiful in form and color, by familiarizing the eye with the best models, the works of great artists, and beautiful natural objects. Skill in drawing from nature results from a careful progress through a well-analyzed series of models. The interests of commerce are so intimately connected with the results to be obtained by this branch of elementary education, that there is little chance that it will much longer suffer the grievous neglect it has hitherto experienced.

The drawing classes at Battersea were first exercised in very simple models, formed of oblong pieces of wood, arranged in a great variety of forms by the master, according to the method observed in the Swiss and German schools. These were drawn in common and in isometrical perspective, the laws of perspective being at the same time carefully explained, and the rules applied in each case to the object which the pupil drew. A very little practice made us aware that a method comprising a more minute analysis of form was necessary to the greatest amount of success. Some inquiries which were pursued in Paris put us in possession of the method invented by M. Dupuis; and a series of his models were purchased and brought over at the close of the autumn, for the purpose of making a careful trial of this method. Considerable difficulty was experienced in procuring the services of an artist to superintend the instruction; but at length the application of this method has been commenced, and is in progress.

The experience of the French inspectors of schools (at an early period after the establishment of the system of inspection) convinced them that, to the perfection of *skill in drawing form*, the practice of drawing from models is necessary. The best copyists frequently, or rather generally, were found to fail in drawing even very simple natural objects on their first trials. In the drawing schools at

Paris, in which the most elaborate engravings were admirably copied, an inspector would discover that the pupils were unable to draw correctly the professor's desk and chair. It became, therefore, evident that the copy could not stand in the place of the natural object. Copying works of art might be essential to one department of skill and taste, but it by no means necessarily gave skill in drawing from nature.

M. Dupuis was an inspector, and, observing this defect, he invented a series of models, ascending from a simple line of wire through various combinations to complex figures. These models are fixed on an instrument, on the level of the eye, and may, by the movement of the instrument, be placed in a varying perspective. By this means the pupil may learn to draw the simplest objects, and proceed by gradual steps through a series of combinations, of an almost insensibly increasing difficulty, until he can draw faithfully any object, however complex. The instrument which holds the object enables the teacher, by varying its position, to give at each lesson a series of demonstrations in perspective, applying the rules to objects of a gradually increasing complexity, until they are understood in their relations to the most difficult combinations. Thus practical skill and theoretical knowledge are in harmony in this instruction. The taste may afterward be cultivated by drawing those works of art best adapted to create a just sense of the beautiful in form and color.

That which a workman first requires is mechanical skill in the art of drawing. Nature itself offers many opportunities to cultivate the taste insensibly; and skill can be acquired only by careful and prolonged practice in the art of drawing from nature. In the more advanced parts of the course, we shall be able to satisfy ourselves as to the best mode of using the skill acquired for the formation of the taste.

In the normal schools at Versailles one year's instruction had sufficed to give the pupils a wonderful facility and skill in drawing from models. Some complicated pneumatic apparatus, consisting of glass, mahogany, brass, and in difficult perspective, was drawn rapidly, and with great truth and skill. It is not, however, our intention to carry the instruction of our pupils in this art further than is necessary for the industrial instruction of their future scholars.

Some of the reasons inducing us to attach much importance to the cultivation of *vocal music* have already been briefly indicated. We regard it as a powerful auxiliary in rendering the devotional services of the household, of the parish church, and of the village school, solemn and impressive. Our experience satisfies us that we by no means over-estimated this advantage, though all the results are not yet obtained which we trust will flow from the right use of these means.

Nor were we indifferent to the cheerfulness diffused in schools by the singing of those melodies which are attractive to children, nor unconscious of the moral power which music has when linked with sentiments which it is the object of education to inspire. We regard school songs as an important means of diffusing a cheerful view of the duties of a laborer's life; of diffusing joy and honest pride over English industry. Therefore, to neglect so powerful a moral agent in elementary education as vocal music, would appear to be unpardonable. We availed ourselves of some arrangements which were at this time in progress, under the superintendence of the Committee of Council, for the introduction of the method* of M. Wilhem, which has been singularly successful in France.

A method which has succeeded in attracting thousands of artisans in Paris from low cabarets and miserable gambling-houses, to the study of a science and the practice of a captivating art, deserves the attention of the public. Mr. Hullah, in adapting the method of Wilhem to English tastes and habits, has both simplified and refined it. He has, moreover, adapted to it a considerable number of old English melodies, of great richness and character, which were fast passing into oblivion, and which may be restored to the place they once held in the affections of the people, being now allied with words expressive of the joys and hopes of a laborer's life, and of the true sources of its dignity and happiness.

We have assisted in the development of this method, being convinced that it may tend to elevate the character of our elementary schools, and that it may be of great use throughout the country in restoring many of our best old English melodies to their popularity, and in improving the character of our vocal music in village churches, through the medium of the parochial schoolmaster and his pupils.

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* For a description of Wilhem's method, see p. 275.

When the preparatory course was sufficiently advanced, a series of lectures on the construction and organization of elementary schools, and on the theory and art of teaching, were commenced. They have resembled those given in the German and Swiss schools under the generic term Pædagogik.

They have treated of the general objects of education, and the means of attaining them. The peculiar aims of elementary education; the structure of school-houses in various parts of Europe; the internal arrangement of the desks, forms, and school apparatus, in reference to different methods of instruction, and the varieties of those methods observed in different countries. The theory of the discipline of schools. Its practice, describing in detail the different expedients resorted to in different countries for the purpose of procuring order, decorum propriety of posture and manner, regularity and precision in movements, and in changes of classes and exercises, and especially the right means of securing the reverence and the love of the children. This last subject naturally connects the consideration of the mechanical and methodic expedients with the consideration of the sources of the schoolmaster's zeal, activity, and influence, on which much has been said. To these subjects have succeeded lectures on the great leading distinctions in the methods of communicating knowledge. When the distinguishing principles had been described, the characteristic features of the several methods were examined *generally*, and certain peculiar applications of each were treated. The application of these methods to each individual branch of instruction was then commenced, and this part of the course has treated of various methods of teaching to read, especially giving a minute description of the *phonic* method. Of methods of teaching to write, giving a special account of the method of Mulhauser. On the application of writing in various methods of instruction Of methods of teaching to draw, giving a detailed account of that of M. Dupuis Of methods of teaching arithmetic, in which the method of Pestalozzi has been carefully explained, and other expedients examined. This brief sketch may indicate the character of the instruction up to the period of this report. Our desire is to anticipate as little as possible, but, on the contrary, to relate only what *has been done*. We have therefore only to add, that the instruction in Pædagogik is in its preparatory stage, and that the course will be pursued, in relation both to the general theory and practice, and to the special application of the theory and practice to the development of the village school, and of the training school, through the whole period of instruction, as that part of the studies of the pupils by which the mutual relations of these studies are revealed, and their future application anticipated.

We regard these lectures, combined with the zealous labor of the Hon. and Rev. Robert Eden, as the chief means by which, aided by the tutors, such a tone of feeling can be maintained as shall prepare the teachers to enter upon their important duties, actuated by motives which will be the best means of insuring their perseverance, and promoting their success.

The Brothers of the Christian Doctrine, who devote their lives a cheerful sacrifice to the education of the poorer classes of France, can be understood best by those who have visited their Novitiate and schools at Paris. From such persons we expect acquiescence when we say, that their example of Christian zeal is worthy of the imitation of Protestants. Three of the brothers of this order are maintained for a sum which is barely the stipend of one teacher of a school of mutual instruction in Paris. Their schools are unquestionably the best at Paris. Their manners are simple, affectionate, and sincere. The children are singularly attached to them. How could it be otherwise, when they perceive that these good men have no other reward on earth for their manifold labors than that of an approving conscience?

The *régime* of the *Novitiate* is one of considerable austerity. They rise at four. They spend an hour in private devotion, which is followed by two hours of religious exercises in their chapel. They breakfast soon afterward, and are in the day schools of Paris at nine. They dine about noon, and continue their attention to the schools till five. They sup at six, and then many of them are employed in evening schools for the adults from seven to nine, or from eight to ten, when, after prayers, they immediately retire to rest.

No one can enter the schools of the Brothers of the Christian Doctrine without feeling instinctively that he is witnessing a remarkable example of the development of Christian charity.

With such motives should the teachers of elementary schools, and especially those who are called to the arduous duties of training pauper children, go forth to their work. The path of the teacher is strewn with disappointments, if he commence with a mercenary spirit: it is full of encouragement, if he be inspired with the spirit of Christian charity. No skill can compensate adequately for the absence of a pervading religious influence on the character and conduct of the schoolmaster.

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The technical instruction in that knowledge which it will be the duty of the pupils to communicate in elementary schools, occupies a much greater portion of the time in the preparatory course than that which will be allotted to such studies in the two subsequent years.

Every month will now bring into greater prominence *instruction, theoretical and practical, in the art of teaching.* The outlines only of a future course of instruction in this most important element of the studies of a training school have been communicated. Some of the principles have been laid down, but the application of these principles to each subject of instruction, and the arrangement of the entire matter of technical knowledge, in accordance with the principles of elementary teaching, is a labor to which a large portion of the future time of the pupils must be devoted.

Those studies which will prepare them for the performance of collateral duties in the village or parish have not been commenced.

The instruction in the management of a garden; in pruning and grafting trees; in the relative qualities of soils, manures, and the rotation of garden crops, is to form a part of the course of instruction, after the certificate of candidate is obtained.

A course on the domestic economy of the poor will be delivered in the same year, which will be followed by another on the means of preserving health, especially with regard to the employments, habits, and wants of the working classes. Some general lectures on the relations of labor and capital will close this course.

From the following extracts from the Report of the Founders of the Institution in 1843, it will be seen that they were induced, after three years' experience, to change one feature of their original plan, and, instead of taking boys of the age of fourteen, to select their candidates for admission from youths who had attained the age of eighteen or twenty years. This change has special reference to teachers designed for large schools in commercial towns and manufacturing districts. They also advise a course of preparatory training, previous to their admission into a Normal School, similar to that pursued in Holland.

In Holland, the elementary schoolmasters of every great town form a society, associated for their common benefit. Their schools are always large, varying in numbers from three to seven hundred, or even a thousand children, who are often assembled in one room. Every master is aided by a certain number of assistants of different ages, and by pupil-teachers.

The course through which a youth passes from a position of distinction, as one of the most successful scholars, to that of master of a school, is obvious. He is apprenticed as a pupil-teacher (an assistant equivalent, in the first stage, to the most superior class of our monitors in England). As pupil-teacher he assists in the instruction of the youngest classes during the day, witnessing and taking part in the general movements of the school, and in the maintenance of discipline and order. He resides with his own family in the city, and before he is admitted apprentice, care is taken to ascertain that he belongs to a well-conducted house hold, and that he will be reared by his parents in habits of religion and order Every evening all the pupil-teachers of the town are assembled to receive instruction. The society of teachers provides from its own body a succession of instructors, by one of whom, on each night of the week, the pupil-teachers are taught some branch of elementary knowledge necessary to school-keeping. One of the most experienced masters of the town, likewise, gives them lectures on method, and on the art of organizing and conducting a school.

The society of schoolmasters meets from time to time to receive from each of its members an account of the conduct, progress, and qualifications of each pupil-teacher in the town, not only in the evening class, but in the school duties of the day.

On the reputation thus acquired, and preserved, depends the progress of the pupil-teacher in the art of school-keeping. As his experience becomes more mature, and his knowledge increases, he is intrusted with more important matters and higher classes in the school. He undergoes two successive examinations by the Government Inspector, being first admitted candidate and afterward assistant master, and he is then at liberty to complete his course of training by entering the Normal School at *Haarlem*, from which he can obtain the highest certificates of fitness for the duties of his profession.

This appears to us a course of training peculiarly well adapted to the formation of masters for the great schools of large towns, and likewise for supplying these great schools, during the education of the pupil-teacher, with the indispensable aid of a body of assistant masters, without which they must continue to be examples of an economy which can spare nothing adequate to the improvement of the people.

The formation of a body of pupil-teachers in each great town, thus instructed by a society of schoolmasters, is an object worthy of encouragement from the Committee of Council, who might at least provide the fees and charges of apprenticeship, and grant exhibitions for the training of the most successful pupil-teachers in a Normal School at the close of their apprenticeship, even if the Government were indisposed to encounter any of the annual charges incident to the plan.

Few words are requisite to render apparent the difference between the life of a pupil-teacher so trained, and that of a young novice in a Normal School. The familiar life of the parental household, while it exercises a salutary influence on the habits and manners of the young candidate, is not remote from the great scene of exertion in which his future life is to be spent. He is unconsciously prepared by the daily occurrences in his father's family, and by his experience and instruction in the day and evening school, to form a just estimate of the circumstances by which he is surrounded. He is trained from day to day in the management of the artful and corrupt children even of the dregs of the city, and enabled to apply such means as the discipline and instruction of a common school afford, to the improvement of the moral and intellectual condition of the children of the common people. He becomes an agent of civilization, fitted for a peculiar work by habit, and prepared to imbibe during the year or year and a half he may spend in a Normal School those higher maxims of conduct, that more exact knowledge, and those more perfect methods of which it is the proper source. From such a period of training, he returns to his native city, or is sent to some other town, strong in the confidence inspired by his prolonged experience of the peculiar duties he has to perform, either to take a high rank as an assistant master, or to undertake the responsibility of conducting a town school as its chief.

These are the views which have led us to conclude that the admission of *boys* into a Normal School, as distinguished from a *Mother School*, is not a fit preparation for the discharge of the duties of a schoolmaster in a large town.

We have gradually raised the age of admission from 14 to 16, and thence to 18 or 20 years, and we are now of opinion that few or none should be admitted into a Normal School under the latter age.

Besides the reasons already stated why youths under 18 should not be admitted into such a school, there are some arising out of the internal economy of a Normal School of sufficient importance to deserve enumeration.

If youths are admitted, none who have arrived at adult age should be permitted to enter. The youth necessarily enters for a course of training which extends over several years; the adult student commonly enters for a year and a half or two years. The attainments of all are meager on their admission. In the course of a few years, therefore, the youngest pupils are necessarily at the head of the school in their attainments and skill, which is a source of great discouragement to an adult entering such an establishment, and a dangerous distinction to a youth whose acquirements have suddenly raised him intellectually above all in his sphere of life. The tendencies of such a great disparity in the acquirements appropriate to the two classes of age are obviously injurious. We have experienced the consequences of this disparity as a disturbing force in the training schools, and to counteract these tendencies has required a vigilance and provident care, which has increased our labors and anxieties. Few things have been more pleasing than the readiness with which some of the oldest students who have entered the schools have taken their seats in the humblest positions, and passed with patient perseverance through all the elementary drudgery, though boys have held the most prominent positions in the first class, and have occasionally become their instructors. On the other hand, to check the conceit too frequently engendered by a rapid progress, when attended with such contrasts, we have suggested to the masters, that the humble assiduity of the recently entered adult pupil ought to secure an expressive deference and attention.

The intellectual development of the young pupils is a source of care insignificant in comparison with that attending the *formation of their characters*, and this could be accomplished with greater ease and certainty if they were the sole objects of solicitude. But, as members of an establishment into which adults are admitted in an equality or inferiority of position, the discipline is complicated and the sources of error are increased.

For these reasons, we prefer to admit into a Normal School only students of adult age, reared by religious parents, and concerning whose characters and qualifications the most satisfactory testimonials can be procured. The inquiries preliminary to the admission of a student should in all cases, where it may be practicable, extend to his previous habits and occupations, to the character of the household in which he has resided, and the friendships he has formed. In all cases those young men are to be preferred whose previous pursuits warrant some confidence in their having a predilection for the duties of a teacher of the poor.

Our plans have therefore tended to the introduction of young men of 18 years of age and upward for a training of one year and a half, which we are led to regard as the shortest period which it is desirable they should spend in such a school.

With this explanation of a modification of one feature in their original plan, the Report for 1843 proceeds to discuss the main objects of a Normal School.

The main object of a Normal School is the *formation of the character of the schoolmaster*. This was the primary idea which guided our earliest efforts in the establishment of the Battersea Schools on a basis different from that of any previous example in this country. We have submitted to your lordship the reasons which have led us to modify one of the chief features of our plan, but our convictions adhere with undiminished force to the principle on which the schools were originally founded. They were intended to be an institution in which every object was subservient to the *formation of the character of the schoolmaster*, as an intelligent Christian man entering on the instruction of the poor, with religious devotion to his work. If we propose to change the means, the end we have in view is the same. Compelled by the foregoing considerations to think the course of training we proposed for youths does not prepare them for the charge of large schools in manufacturing towns, we are anxious that the system pursued in Holland should be adopted, as a training preparatory to the examination of the pupil-teachers previously to their admission into a Normal School. Finding that the patrons of students and the friends of the establishment are unable, for the most part, to support a longer training for young men than one year and a half, we are more anxious respecting the investigation of their previous characters and connections, and more fastidious as to their intellectual qualifications and acquirements.

When circumstances thus combine to prevent the residence of the students in the training school for a longer period than a year and a half, the inquiries as to previous character cannot be conducted with too much care, and *the first month of training should, under any circumstances, be regarded as probationary.*

Under these arrangements, also, the impression produced upon the characters of the students during their residence is of paramount importance.

They are commonly selected from an humble sphere. They are the sons of small tradesmen, of bailiffs, of servants, or of superior mechanics. Few have received any education, except that given in a common parochial school. They read and write very imperfectly; are unable to indite a letter correctly; and are seldom skillful, even in the first four rules of arithmetic. Their biblical knowledge is meager and inaccurate, and all their conceptions, not less on religious than on other subjects, are vague and confused, even when they are not also very limited or erroneous. Their habits have seldom prepared them for the severely regular life of the Normal School, much less for the strenuous effort of attention and application required by the daily routine of instruction. Such concentration of the mind would soon derange the health, if the course of training did not provide moderate daily exercise in the garden, at proper intervals. The mental torpor, which at first is an obstacle to improvement, generally passes away in about three months, and from that period the student makes rapid progress in the studies of the school.

These attainments, humble though they be, might prove dangerous to the character of the student, if his intellectual development were the chief concern of the masters.

How easy it would be for him to form an overweening estimate of his knowledge and ability, must be apparent, when it is remembered that he will measure his learning by the standard of that possessed by his own friends and neighbors. He will find himself suddenly raised by a brief course of training to the position of a teacher and example. If his mind were not thoroughly penetrated by religious principle, or if a presumptuous or mercenary tone had been given to his character, he might go forth to bring discredit upon education, by exhibiting a precocious vanity, an insubordinate spirit, or a selfish ambition. He might become, not the gentle and pious guide of the children of the poor, but a hireling, into whose mind had sunk the doubts of the skeptic; in whose heart was the worm of social discontent; and who had changed the docility of ignorance and dullness, for the restless impatience of a vulgar and conceited sciolist.

In the formation of the character of the schoolmaster, the discipline of the training school should be so devised as to prepare him for the modest respectability of his lot. He is to be a Christian teacher, following Him who said, "He that will be my disciple, let him take up his cross." Without the spirit of self-denial, he is nothing. His reward must be in his work. There should be great simplicity in the life of such a man.

Obscure and secluded schools need masters of a contented spirit, to whom the training of the children committed to their charge has charms sufficient to concentrate their thoughts and exertions on the humble sphere in which they live, notwithstanding the privations of a life but little superior to the level of the surrounding peasantry. When the scene of the teacher's exertions is in a neighborhood which brings him into association with the middle and upper classes of society, his emoluments will be greater, and he will be surrounded by temptations which, in the absence of a suitable preparation of mind, might rob him of that humility and gentleness which are among the most necessary qualifications of the teacher of a common school.

In the training school, habits should be formed consistent with the modesty of his future life. On this account, we attach peculiar importance to the discipline which we have established at Battersea. Only one servant, besides a cook, has been kept for the domestic duties of the household. The whole household work, with the exception of the scouring of the floors and cooking, is performed by the students; and they likewise not only milk and clean the cows, feed and tend the pigs, but have charge of the stores, wait upon each other, and cultivate the garden. We cannot too emphatically state our opinion that no portion of this work could be omitted, without a proportionate injury to that contentment of spirit, without which the character of the student is liable to be overgrown with the errors we have described.

The garden-work also serves other important ends. Some exercise and recreation from the scholastic labors are indispensable. Nevertheless, a large portion of the day cannot be devoted to it, and when three or four hours only can be spared, care should be taken that the whole of this time is occupied by moderate and healthful exertion in the open air. A period of recreation employed according to the discretion of the students would be liable to abuse. It might often be spent in listless sauntering, or in violent exertion. Or if a portion of the day were thus withdrawn from the observation of the masters of the school, it would prove a period in which associations might be formed among the students inconsistent with the discipline; and habits might spring up to counteract the influence of the instruction and admonition of the masters. In so brief a period of training, it is necessary that the entire conduct of the student should be guided by a superior mind.

Not only, by the daily labor of the garden, are the health and morals of the school influenced, but habits are formed consistent with the student's future lot. It is well both for his own health, and for the comfort of his family, that the schoolmaster should know how to grow his garden stuff, and should be satisfied with innocent recreation near his home.

We have also adhered to the frugal diet which we at first selected for the school. Some little variety has been introduced, but we attach great importance to the students being accustomed to a diet so plain and economical, and to arrangements in their dormitories so simple and devoid of luxury, that in after life they will not in an humble school be visited with a sense of privation, when their scanty fare and mean furniture are compared with the more abundant food and comforts of the training school. We have therefore met every rising complaint respecting either the quantity or quality of the food, or the humble accommodation in the dormitories, with explanations of the importance of forming, in the school, habits of frugality, and of the paramount duty of nurturing a patient spirit, to meet the future privations of the life of a teacher of the poor.

Our experience also leads us to attach much importance to simplicity and propriety of dress. For the younger pupils we had, on this account, prepared a plain dark dress of rifle green, and a working dress of fustian cord. As respects the adults, we have felt the importance of checking the slightest tendency to peculiarity of dress, lest it should degenerate into foppery. We have endeavored to impress on the students that the dress and the manners of the master of a school for the poor should be decorous, but that the prudence of his life should likewise find expression in their simplicity. There should be no habit nor external sign of self-indulgence or vanity.

On the other hand, the master is to be prepared for a life of laborious exertion. He must, therefore, form habits of early rising, and of activity and persevering industry. In the winter, before it is light, the household work must be finished, and the school-rooms prepared by the students for the duties of the day. One hour and a half is thus occupied. After this work is accomplished, one class must assemble winter and summer, at a quarter to seven o'clock, for instruction. The day is filled with the claims of duty requiring the constant exertion of mind and body, until, at half past nine, the household retire to rest.

By this laborious and frugal life, economy of management is reconciled with the efficiency both of the moral and intellectual training of the school, and the master goes forth into the world humble, industrious, and instructed.

But into the student's character higher sentiments must enter, if we rightly conceive the mission of the master of a school for the poor. On the religious condition of the household, under the blessing of God, depends the cultivation of that religious feeling, without which the spirit of self-sacrifice cannot take its right place among the motives which ought to form the mainspring of a schoolmaster's activity.

There is a necessity for incessant vigilance in the management of a training school. The principal should be *wise as a serpent*, while the gentleness of his discipline, and his affectionate solicitude for the well-being of his pupils, should encourage the most unreserved communications with him. Much of his leisure should be devoted to private interviews with the students, and employed in instilling into their minds high principles of action. A cold and repulsive air of authority may preserve the appearance of order, regularity, and submission in the household; but these will prove delusive signs if the principal does not possess the respect and confidence, not to say the affections, of his charge. He should be most accessible, and unwearied in the patience with which he listens to confessions and inquiries. While it is felt to be impossible that he should enter into any compromise with evil, there should be no such severity in his tone of rebuke as to check that confidence which seeks guidance from a superior intelligence. As far as its relation to the principal only is concerned, every fault should be restrained and corrected by a conviction of the pain and anxiety which it causes to an anxious friend, rather than by the fear of a too jealous authority. Thus conscience will gradually be roused by the example of a master, respected for his purity, and loved for his gentleness, and inferior sentiments will be replaced by motives derived from the highest source.

Where so much has to be learned, and where, among other studies, so much religious knowledge must be acquired, there is danger that religion should be regarded chiefly as a subject for the exercise of the intellect. A speculative religious knowledge, without those habits and feelings which are the growth of deeply-seated religious convictions, may be a dangerous acquisition to a teacher of the young. How important, therefore, is it that the religious services of the household should become the means of cultivating a spirit of devotion, and that the religious instruction of the school should be so conducted as not merely to inform the memory, but to master the convictions and to interest the feelings! Religion is not merely to be taught in the school—it must be the element in which the students live.

This religious life is to be nurtured by the example, by the public instruction of the principal, and by his private counsel and admonition; by the religious services of the household; by the personal intercourse of the students, and the habits of private meditation and devotion which they are led to form; by the public worship of the church, and by the acts of charity and self-denial which belong to their future calling.

How important is it that the principal should embody such an example of purity and elevation of character, of gentleness of manners, and of unwearied benevolence, as to increase the power of his teaching, by the respect and conviction which wait upon a consistent life! Into the religious services of the household he should endeavor to inspire such a spirit of devotion as would spread itself through the familiar life, and hallow every season of retirement. The management of the village school affords opportunities for cultivating habits of kindness and patience. The students should be instructed in the organization and conduct of Sunday-schools; they should be trained in the preparation of the voluntary teachers by previous instruction; in the visitation of the absent children; in the management of the clothing and sick clubs and libraries attached to such schools. They should be accustomed to the performance of those parochial duties in which the schoolmaster may lighten the burden of the clergyman. For this purpose, they should learn to keep the accounts of the benefit club. They should instruct and manage the village choir, and should learn to play the organ.

While in attendance on the village school, it is peculiarly important that they should accompany the master in his visits to children detained at home by sickness, and should listen to the words of counsel and comfort which he may then administer; they should also attend him when his duty requires a visit to the parents of some refractory or indolent scholar, and should learn how to secure their aid in the correction of the faults of the child.

Before he leaves the training school, the student should have formed a distinct conception, from precept and practice, how his example, his instruction, and his works of charity and religion, ought to promote the Christian civilization of the community in which he labors.

Turn we again to the contrast of such a picture. Let us suppose a school in which this vigilance in the formation of character is deemed superfluous; or a principal, the guileless simplicity of whose character is not strengthened by the wisdom of experience. A fair outward show of order and industry, and great intellectual development, may, in either case, be consistent with the latent progress of a rank corruption of manners, mining all beneath. Unless the searching intelligence of the principal is capable of discerning the dispositions of his charge, and anticipating their tendencies, he is unequal to the task of molding the minds of his pupils, by the power of a loftier character and a superior will. In that case, or when the principal deems such vigilance superfluous, and is content with the intellectual labors of his office, leaving the little republic, of which he is the head, to form its own manners, and to create its own standard of principle and action, the catastrophe of a deep ulcerous corruption is not likely to be long delayed.

In either case, it is easy to trace the progress of degeneracy. A school, in which the formation of character is not the chief aim of the masters, must abandon that all-important end to the republic of scholars. When these are selected from the educated and upper ranks of society, the school will derive its code of morals from that prevalent in such classes. When the pupils belong to a very humble class, their characters are liable, under such arrangements, to be compounded of the ignorance, coarseness, and vices of the lowest orders. One pupil, the victim of low vices, or of a vulgar coarseness of thought, escaping the eye of an unsuspicious principal, or unsought for by the vigilance which is expended on the intellectual progress of the school, may corrupt the private intercourse of the students with low buffoonery, profligate jests, and sneers at the self-denying zeal of the humble student; may gradually lead astray one after another of the pupils to clandestine habits, if not to the secret practice of vice. Under such circumstances, the counsels of the principal would gradually become subjects of ridicule. A conspiracy of direct insubordination would be formed. The influence of the superior would barely maintain a fair external appearance of order and respect.

Every master issuing from such a school would become the active agent of a degeneracy of manners, by which the humbler ranks of society would be infected.

The formation of the character is, therefore, the chief aim of a training school, and the principal should be a man of Christian earnestness, of intelligence, of experience, of knowledge of the world, and of the humblest simplicity and purity of manners.

Next to the formation of the character of the pupil is, in our estimation, the general development of his intelligence. The extent of his attainments, though within a certain range a necessary object of his training, should be subordinate to that mental cultivation, which confers the powers of self-education, and gives the greatest strength to his reflective faculties. On this account, among others, we attach importance to the methods of imparting knowledge pursued in the Normal School. While we have insured that the attainments of the students should be exact, by testing them with searching examinations, repeated at the close of every week, and reiterated lessons on all subjects in which any deficiency was discovered, nothing has been taught by rote. The memory has never been stored, without the exercise of the reason. Nothing has been learned which has not been understood. This very obvious course is too frequently lost sight of in the humbler branches of learning—principles being hidden in rules, defining only their most convenient application; or buried under a heap of facts, united by no intelligible link. To form the character, to develop the intelligence, and to store the mind with the requisite knowledge, these were the objects of the Normal School.

In the village school a new scene of labor developed itself, which has been in progress since the period of our last report, and has now nearly reached its term. If we attach pre-eminent importance to the formation of character as the object of the Normal School, a knowledge of the method of managing an elementary school, and of instructing a class in each branch of elementary knowledge, is the peculiar object of the model-school attached to any training institution. In its proper province as subordinate to the instruction and training in a Normal School, it is difficult to exaggerate the importance to a teacher, of a thorough familiarity with the theory and practice of organizing and conducting common schools. Without this, the most judicious labor in the Normal School may, so far as the future usefulness of the student as a schoolmaster is concerned, be literally wasted. It is possible to conceive that the character may be formed on the purest model; that the intelligence may have been kept in healthful activity; and that the requisite general and technical instruction may have been acquired, yet without the aptitude to teach; without skill acquired from precept and example; without the habits matured in the discipline of schools; without the methods in which the art of teaching is reduced to technical rules, and the matter of instruction arranged in the most convenient form for elementary scholars, the previous labor wants the link which unites it to its peculiar task. On the other hand, to select from the common drudgery of a handcraft, or from the humble, if not mean pursuits of a petty trade, a young man barely (if indeed at all) instructed in the humblest elements of reading, writing, and arithmetic, and to conceive that a few months' attendance on a model-school can make him acquainted with the theory of its organization, convert him into an adept in its methods, or even rivet upon his stubborn memory any significant part of the technical knowledge of which he has immediate need, is a mistake too shameful to be permitted to survive its universal failure.

When we speak of the necessity of a thorough acquaintance with methods of organizing and teaching in common schools, we mean to *exalt* the importance of previous training of the character, expansion of the intelligence, and sufficient technical instruction. Without this previous preparation, the instruction in the model-school is empirical, and the luckless wight would have had greater success in his handcraft, than he can hope to enjoy in his school.

For these reasons, among others, the attention of the students has especially of late been directed to the theory of the organization of schools, and to the acquirement of the art of teaching.

The *method of conveying instruction* is peculiarly important in an elementary school, because the scholars receive no learning and little judicious training at home, and are, therefore, dependent for their education on the very limited period of their attendance at school. On this account nothing superfluous should be taught, lest what is necessary be not attained. The want of a fit preparation of the mind of the scholar, and the brevity of his school life, are reasons for adopting the most certain and efficacious means of imparting knowledge, so that this short period may become as profitable as possible. The regularity of the child's attendance, the interest he takes in his learning, and his success, will be promoted by the adoption of means of instruction suited to the state of his faculties and the condition of society from which he is taken. If his progress be obstructed by the obscurity of his master's teaching, and by the absence of that tact which captivates the imagination of children, and rouses the activity of their minds, the scholar will become dull, listless, and untoward; will neglect his learning and his school, and degenerate into an obstinate dunce. The easiest transition in acquirement is in the order of simplicity from the known to the unknown, and it is indispensable to skillful teaching that the matter of instruction should be arranged in a synthetic order, so that all the elements may have to each other the relation of a progressive series from the most simple to the most complex. This arrangement of the matter of instruction requires a previous analysis, which can only be successfully accomplished by the devotion of much time. Such methods are only gradually brought to perfection by experience. The elementary schoolmaster, however highly instructed, can seldom be expected to possess either the necessary leisure or the peculiar analytical talent; and unless this work of arrangement be accomplished for him, he cannot hope, by the technical instruction of the Normal School, to acquire sufficient skill to invent a method by arranging the matter of instruction.

In order, therefore, that he may teach nothing superfluous; that he may convey his instruction in the most skillful manner, and in the order of simplicity, it is necessary that he should become acquainted with a *method* of communicating each branch of knowledge.

This is the more important, because individual teaching is impossible in a common school. Every form of organization, from the monitorial to the simultaneous, includes more or less of collective teaching. The characteristics of skillful collective teaching are the simplicity and precision with which the knowledge is communicated, and the logical arrangement of the matter of instruction. Diffuse, desultory, or unconnected lessons are a waste of time; they leave no permanent traces on the memory; they confuse the minds of children, instead of instructing them and strengthening their faculties.

Certain moral consequences also flow from the adoption of skillful methods of teaching. The relations of regard and respect which ought to exist between the master and his scholars are liable to disturbance, when, from his imperfect skill, their progress in learning is slow, their minds remain inactive, and their exertions are languid and unsuccessful. A school in which the master is inapt, and the scholars are dull, too frequently becomes the scene of a harsher discipline. Inattention must be prevented—indolence quickened—impatience restrained—insubordination and truancy corrected; yet all these are early consequences of the want of skill in the master. To enforce attention and industry, and to secure obedience and decorum, the languid and the listless are too often subjected to the stimulus of coercion, when the chief requisite is method and tact. The master supplies his own deficiencies with the rod; and what he cannot accomplish by skill, he endeavors to attain by the force of authority.

Such a result is not a proper subject of wonder, when the master has received no systematic instruction in method. To leave the student without the aid of *method*, is to subject him to the toil of analysis and invention, when he has neither the time nor the talent to analyze and invent.

The Report of 1843 dwells on the several methods previously noticed in the extracts already made from the Report of 1841, and concludes as follows:

These several *Methods* have now been tested by experience on the most public theater, and have become an important part of the instruction of masters of elementary schools. The Manuals in which they are embodied render their acquisition comparatively easy even to those who do not enjoy the advantage of receiving lessons in the art of teaching by them from adepts. The school of method will place within the reach of the schoolmasters of the metropolis the means of acquiring the requisite skill; and the body of schoolmasters, whom the Normal Schools will annually disseminate, will diffuse them through the country. Every school conducted with complete efficiency by a master trained in a Normal School, will become a model to neighboring schools which have not enjoyed similar advantages. On this account alone, it is important that no student from a Normal School should commence his labors in the country until he has acquired a mastery of the methods of teaching these necessary elements.

In a course of instruction extending over a year and a half, a student ought to spend three hours daily, during six or eight months, in the practice of the art of teaching in the village school. When the course of instruction is necessarily limited to one year, four months should be thus employed, and during the entire period of his training, instruction in method should form an element of the daily routine in the Normal School.

By such means alone can a rational conception of method be attained, and that skill in the art of conducting a school and instructing a class without which all the labors of the Normal School in imparting technical knowledge are wasted, because the student has no power of communicating it to others.

In the Report of 1847, the Inspector, Mr. Moseley, makes the following remarks:

There is one point of view in which we cannot but speak of the labors of this institution with unmingled satisfaction. It stands out honorably distinguished from all others as a place where THE METHODS OF ELEMENTARY INSTRUCTION are recognized as legitimate objects of research, and where TEACHING IS STUDIED AS AN ART.

That shifting, dreamy state of the mind which is associated with mechanical pursuits, such as have usually been the previous pursuits of the students of training institutions, does not readily pass into a close and continuous application of the understanding, any more than, in respect to our bodily health, a state of constant physical exertion gives place quietly to a sedentary life. A laborer is not easily converted into a student. It is not to be done by putting a book before him. He may sit with that book before him for months, and yet never begin to *learn*.

Such a man requires to be roused from that mental apathy which has grown upon him by the disuse of his faculties, and to be taught the secret of his powers. This is best effected by the direct contact of his own mind with that of a vigorous teacher, and for this reason oral instruction is specially adapted to the business of a training school.

A system which limits itself to this expedient of instruction will probably, however, fail of some important results. The teacher must also be a student. Unless this be the case, the lessons he gives in his school will echo every day more faintly the instructions he received at the college. Each lesson should have had its preparation. However humble the subject, or the class of children to whom it is addressed, there is probably some information to be gathered from books which is applicable to it; and it is in the direction of such applications that lie the legitimate studies of the teacher—studies not less valuable in their influence upon his school than upon himself.

The labor of oral instruction is, however, so great, that to adopt it in respect to ever so small a number of students, supposes the union of several teachers; and thus is obtained that division of the subjects taught among the teachers which enables each *to confine his attention to a particular class of subjects*, and thereby himself to acquire not only that greater knowledge of these subjects, but of the *best means of teaching them*, which is essential to his success.

It is not only, however, because each teacher teaches *better*, that a favorable influence is to be attributed to the labors of various teachers in an institution like this, but because there is an awakening and stimulating power in the rude attacks made by a succession of vigorous teachers—each with a different subject, and an energy concentrated in it—on a sluggish understanding; and in the different impressions they leave upon it.

There are phases in every man's mind which adapt it to receive impressions from one teacher rather than another, as well as from one subject rather than from another. And thus, between one of a succession of teachers and some individual student, there may be established sympathies which no other could have awakened, and there may be commenced a process of instruction in some individual mind, which the united labors of all the rest could not have moved.

If any thing had been wanting to confirm in our minds the favorable opinion which has been earned for it among the friends of education, by the many admirable teachers it *has* sent out, the experience of our examination would have supplied it.

Fifty-four young men were assembled who, originally educated here, had for various periods of from one to seven years been in charge of elementary schools. An opportunity was afforded us of forming the personal acquaintance of these men, and each of them taught in our presence one of the classes of the village school.

The impression we received of them from these efforts was eminently favorable. Nor was this favorable opinion shaken by an examination of the papers written in answer to the questions we proposed to them. Although their course of regular instruction had in many cases long ceased, the knowledge they had acquired had not been lost. It was evident that their education had been of that kind which has a tendency to perfect itself, and that the process of instruction commenced here in their minds had gone on.

XII. SECONDARY EDUCATION

IN

SAXONY.

We are indebted for the following account of the gymnasium or school for secondary instruction in Saxony, mainly, to Dr. Hermann Wimmer, of Dresden. Dr. Wimmer* was educated in the common school, gymnasium, and university of his native country; was trained for a classical teacher in the philological seminary of Hermann and Klotz, at Leipsic, and was for several years professor in the Fitzhum gymnasium or Blochmann college at Dresden, one of the best classical schools in Germany.

The gymnasia of Saxony are partly boarding and partly day schools. The most celebrated of the former at Meissen, Grimma, and Schulpforte, were established at the date of the Reformation by the electors of Saxony on the foundation of the old monasteries or cloisters, the buildings and funds being thus diverted from ecclesiastical to educational purposes. These schools are known as *Fürstenschulen*, or Prince schools, or *Klosterschulen*, or Cloister school, from the circumstances of their foundation. These old boarding gymnasia are called, by Dr. Wimmer, the hearths of classical learning in Germany. The gymnasium of Pforta, (schola Portensis,) was opened for pupils in 1543, the funds of the old monastery having been sequestered by the electoral Prince Maurice, on the advice of Luther, for this purpose. In 1815, the school passed with the province in which it is located into the dominions of Prussia. The foundation yielded, in 1838, a revenue of $30,000, on which one hundred and seventy beneficiaries (*intraners*) were lodged, boarded, and instructed. In most of the boarding gymnasia there are a class of pupils, (*extraners*,) whose tuition is free, but who board, at their own expense, with the professors. Besides the Fursten, or Prince schools, there were in all the large cities, a gymnasia supported by municipal taxation and private tuition, and managed by the municipal authorities. But within the last few years most of the gymnasia have been merged in the burgher or higher elementary school, leaving eight or ten to be aided and controlled by the government, and which are continued as classical schools. These are open day schools, and are situated in the larger cities, where the parents of most of the pupils reside.

Between the Fursten, or strictly boarding schools, and the open or day gymnasia, there are two of a peculiar character—the Thomas school at Leipsic, and the Blochmann-vizthum gymnasium at Dresden. The

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* Dr. Wimmer is now (1852) engaged in preparing for the press in Dresden, his observations on "Education and Religion in the United States"—the results of his visit to this country in 1850-51. The work will be sold by B. Westermann & Co., 290 Broadway, New York.

Thomas school is partly a classical and partly a musical institution; more than half of its students form the great vocal choir of the Thomas church, and is celebrated for its performances on Saturday's and Sunday's. Those students called alumni, have their tuition and board free, and in the latter part of their college life earn some money by their occasional singing. A similar musical class exists in connection with other city gymnasia, but the musical instruction is not carried so far. We give a more particular account of the Blochmann institution.

BLOCHMANN-VIZTHUM GYMNASIUM AT DRESDEN.

The Blochmann-vizthum gymnasium combines within itself a classical, and a real or scientific school, and a preparatory school, or progymnasium. It is both a boarding and day school, and partakes of a public and private character, being under the direction of the government authorities as a public school, and supported in part out of funds left by Count Vizthum at the beginning of the 17th century, for the education of children of the Vizthum and other noble families, and for a number of poor boys who are clothed, boarded, and educated as companions of the young nobles to stimulate them by their zeal and diligence.

All the boarding students, about eighty, are distributed into nine rooms. The occupants of a room are under the special care of one of the teachers, who has generally an adjoining dwelling-room. He is interested in their moral and intellectual welfare, is applied to by the teachers who see any thing in their pupils to commend or to blame, and by the parents who wish to hear something about their physical or spiritual health; he gives the allowance of money for buying books, clothes, or whatever they want; briefly, he is the representative of the absent parent, and enjoys usually the respect, confidence, and love of his pupils. They come but occasionally and for a few moments to their room, to get books or something else out of their secretaries, or in stormy days they are allowed to pass a leisure hour there; but the neighboring teacher has no oversight of them, unless he is disturbed in his studies by their noise, and then he gives them to understand, by knocking at the door, that he is at home, which generally suffices to prevent any further interference. The order of the day is exclusively committed to the Inspectors of the day. For every day two professors are intrusted with this responsible office, so that every officer has the ambiguous honor and the tiresome task of sharing with a colleague for one day of the week the command over the whole. On that day he must see that the students rise (at 5 o'clock in the summer, at 6 in the winter,) must be present at the first breakfast, superintend the study hours from 5¾ A. M. to 8 P. M. (all study in four adjoining class-rooms,) lead singing and praying in the chapel, keep order before the lessons begin, ascertain whether all the teachers in the nine classes are present before he leaves for his recitation or lodging-room, must be in the garden at the time of second breakfast from 9¾ to 10¼, in stormy days go over the classes and rooms, and so again froom 11 or 12 till 3, when the lessons commence again and continue till 4¾; and again from 5¼ till 8 are study hours, in which he must be every where and nowhere, and on Wednesdays and Saturdays he must be the walking or bathing-companion of half the section. At 8 is supper time; at 9, the great mass must go to bed, and only such students of the superior classes as are to be trusted, are permitted to study until 10, when the tired inspectors take their last round through the bedrooms, to ascertain whether all are asleep or are likely to be in good order, and then, unless something extraordinary has happened during the day, satisfied with themselves and their day's work, they retire to their rooms. Except the day scholars, no pupil is allowed to leave the house to make a social visit without a ticket of permission from his special tutor, signed likewise by the director, where the time of leaving is mentioned and the statement of the time of arriving and leaving again is expected from the hand of the visited person.

Besides the three or four study hours, under the superintendence of the two inspectors, which are considered sufficient for the necessary preparation and repetition, the students are bound to be in the garden, walking, running, playing, or exercising in some way. It is in this free time, also, that lessons on the piano, in singing, gymnastics, fencing, dancing, and riding, are given. Only the last hour of the evening is allowed to the older students for staying in their rooms. In this respect the Vizthum gymnasium takes the extreme view, and, for aught we know, the practice of studying in the room, adopted by the other colleges, seems to be generally preferable to that of studying in full classes. But it is the authority of the older students, on which the practicability and the success of studying in common rooms, without the inspection of quite as many tutors, chiefly depends, and the character of the institution as well as the demand of rational supervision, seem to have been the causes of an arrangement not sufficiently comfortable to make studying the great pleasure of life, as one might experience in the common rooms of the Fürstenschool, or in the private chambers of students in city gymnasia. There is a conference of the twelve chief teachers on Saturdays, the Director being Chairman and the youngest professor secretary, in which the events of the week are spoken of and disciplinary measures taken. The private teachers have no access but in cases where they are particularly concerned. Every professor has the right of punishing, and the private teachers may apply for it to the inspector. To make use of that painful right, the teacher as such is but rarely forced, oftener in the quality of inspector, and it will be understood, almost never as special tutor. Corporeal punishment is forbidden. The common penalty is deprivation of one of the meals; the highest is imprisonment. It happens in the Blochmann institution, that to malefactors of inveterate habits flogging is applied, but only to those of the two preparatory classes, and by decree of the conference, and in presence of the directors. In the common gymnasia, where professors and students meet with each other only in the recitation rooms, there is less chance of transgressing laws, the law of the class-room being but one, and that every moment impressed upon the mind of the would-be-transgressor by the presence of the law-giver and judge, but habitual indolence and laziness will meet with something more than a sermon on diligence, which would be like casting a brilliant pearl before a swine; a few involuntary study-hours for making a Latin ode appeals better and more successfully to the stubborn heart. It is never too late to mend; hence expulsion from the college is and ought to be a rare case, and such a victim has usually gone, before, through the dark hole called *carcer*, which is known to ninety-nine per cent. of the gymnasiasts more by name than by sight. There is generally speaking, in the German gymnasia, a strict discipline, without any Spartan severity and without Basedow's philanthropical sweetness. Of course, there have been a great many students who never, in their college life, heard a harsh word nor saw a stern look; but others, who are not well prepared, or are inattentive, or noisy, or have written their compositions carelessly, or committed a misdemeanor that comes to the ears of professors, are generally dealt with in good, plain German, and "without gloves," and a repetition may lead, by a long graduation, or rather degradation, to the hole. In the common gymnasia, the professors do not interfere with the private life of the students, unless some charge is brought against them by a citizen.

A gymnasium ordinarily consists of four classes, called Prima, (the highest, or seniors,) Secunda, Tartia, and Quarta, (lowest, or freshman,) and each of these classes are usually divided into two parts, upper and lower. In this institution there are six classes, including the progymnasium.

Pupils are received into the progymnasium at nine or ten years of age, and with the attainments of the elementary period. In this school, which has two classes, they remain until from thirteen to fourteen. Its courses are the following: Bible history, and religion, the German language, the Latin, French, history, arithmetic, knowledge of forms, geography, natural history, drawing, and writing. From the upper class of the progymnasium, the pupils pass to the gymnasium, in which there are four classes. The courses are of religion, Latin, Greek, German language and literature, French, mathematics, history, geography, natural philosophy, natural history, music, and drawing. From the fourth or lowest class of the gymnasium, the pupil who is not intended to go to the university enters the "real gymnasium," or scientific school, in which there are two classes, and the duration of the studies of which is one year less than that of the classical gymnasium. In this the French and English, and the scientific studies, replace the classics, except a portion of Latin, which is still kept up. The courses consist of religion, German language and literature, Latin, French, English, mathematics, physics, chemistry, natural history, mechanics, history, geography, drawing, and music. The distribution of the time of study in the principal branches agrees entirely with that of the two upper classes of the Royal Real School at Berlin, already described.

The arrangements for the superintendence of the pupils in this institution are, in the main, like those of Pforta. Pupils called inspectors are selected, and superintend their fellows when in the play-ground and at study, and there are two masters always on duty as superintendents. The physical education of the pupils is very well attended to, and the alterations of exercise and study have a very good effect. These alterations will appear by the following order of the day:

The boarders rise at six o'clock, and breakfast at a quarter to seven. From a quarter to seven to a quarter to eight, study under the superintendence of the two teachers on duty. Pupils living out of the house join in this study hour. Prayers. From eight to a quarter to ten, instruction. Quarter to ten to quarter after ten, play in the garden, and a light second breakfast. Quarter after ten to twelve, instruction. Twelve to one, instruction in instrumental and vocal music, gymnastic exercises, dancing, or free to play in the grounds under the charge of the two superintendents. At one, the day scholars leave the institution. Quarter after one to two, dinner. Two to three, play under charge of the inspectors. Three to quarter of five, instruction. On Wednesday and Saturday, walks. Quarter to five to quarter after five, lunch and recreation. Quarter after five to eight, study under charge and aided by the inspectors. Eight, supper. At nine the younger pupils retire, the older ones study until ten.

The mathematical instruction in this school is continued, even in the higher branches, upon the inductive plan, and is the most effective which I have ever seen. It consists of a mixture of explanation and question, and of oral and written exercises in the class-room. The recitations are upon the previous lessons, and upon questions given to be solved out of the class-room, and the written exercises are solutions of questions and notes of the explanation of the previous lesson. The collections in natural history are superior to those possessed by any other gymnasium which I visited. Both this and the physical apparatus afford very considerable means of illustration in these departments. The chemical laboratory, in a building apart from the house, is very conveniently arranged, both for instruction and experiments by the pupils.

The time of a gymnasium life varies with the progress of the student in literary acquirements. There are generally semi-annual transfers from one division to the other, and in very rare cases it might happen that an excellent student would finish his course in four years, remaining in each division but half a year, and on the other hand, a first-rate idler might stay as long as eight years. Hence, the average number of college years is six. The student, advancing from one class to another, finds there a remaining stock of students superior to himself, if not in talents, at least in acquaintance with the studies and with the professor of the class. After a three months' study and experience, the able student may leap over that boundary and put himself on a level with his older companions; and then he will be transferred with them to the next class. It is easier to do so in the inferior classes (lower gymnasium, IV. and III.,) where the order of the students is arranged according to their studies in the class, but in the upper gymnasium more respect is paid to the time and common order, though some capital scholar will break through, while some sluggard will be left behind. There is, also, a good deal of difference in this respect between the different schools, some having only annual translations, while only a part of the classes are divided; however, the way of advancement is in all the same, except only in the Blochmann gymnasium, where four regular courses of one year and a half each, carry the student in six years through the four undivided classes.

History flourishes in the German colleges to a high degree, not only the history of ancient Greece and Rome learned by reading the various authors, but also the universal history of the civilized world. The professor of history may be sure to have an attentive class, eager to hear of old German liberty beside the Roman despotism, of the Teutonic race conquering the Roman Europe, first running wild in their bravery, then grafting Christian civilization on the healthy stems of the great empire under Charles the Great, or Charlemagne, and under the Hohenstaufen, of the Franks and Normanns in Gallia, of the Saxons and Angles in

Britain, of the Longobards in Italy, of the sea-power of the Northmen, of the free cities of the Middle Ages, of the Reformation, and of the American Revolution. In history and mathematics generally, the divisions of a class are united. However, in those gymnasia where semi-annual transfers are in use, the teacher of mathematics may have a good deal of trouble, whereas history may be taught in short periods, and easily made intelligible to any one by brief introductions or some private study. We pass by geography, natural history, and philosophy, which have only a short life in the lowest or highest classes.

The circumstances, that mathematics and history are usually taught by one professor each, facilitates somewhat the teaching, as it at least gives free scope to the professor to make his arrangements as he pleases, while the Greek and Latin are mostly taught by class-teachers. The average number of teachers is eight, five or six of them called professors in some gymnasia, upper-teachers in others; or according to their rank Rector or Director, Prorector or Rector, Collega III. (Tertius,) Collega IV. (Quartus,) etc., and two or three Adjuncti or Collaboratores. Each one of them has his respective class, with several lessons in the adjoining classes. It will be understood that this matter depends on the agreement of the conference, and that the colleges, therefore, differ from each other in this respect, sometimes considerably. But to a certain degree it exists even in the Blochmann College, where there is no difference of rank among the professors, and the teachers are appointed not for classes but their respective branches. However, there being four teachers of ancient languages, they have each, besides teaching in all, one class in which they have their chief work. What! four and more teachers, only to instruct in the ancient languages? Yes, and all these have their good week's work. And the ancient languages are not only equally taught throughout the whole college, but even to a greater extent in the highest classes. Besides, an American student has only three recitations a day, a German at least five lessons; hence it is obvious that a greater number of teachers is wanted in German than in American schools.

We have arrived now at an important point of difference. It lies in the character of recitations and lessons. In Germany the student prepares for the lesson; here the student prepares by learning the lesson. In Germany he receives his entire lesson from the teacher; here he recites his lesson to the teacher. There he repeats his lesson at home; here he repeats it before the teacher. Briefly, there he learns almost every thing from the teachers; here he learns the greater part from his books. We hope not to be misunderstood; it is the construction of the machine, not the managing of it, which we have drawn here in sharp lines; too sharp, indeed, to be entirely correct, as it is the case with all distinctions of that kind, and yet evidently characteristic. Generally speaking, an American student has for preparing his lesson double the time of the recitation hour; a German but half the time; besides that, private study being supposed and required as well there as here. Here the class or lesson-book is the fireman who makes the steam power, and the teacher the engineer who makes it run. There the teacher is both fireman and engineer, and the student need to do no more than remember his last trip, and bring a supply of fuel for his further progress. Hence the greater number of lessons and teachers. It follows, likewise, that a German student usually has his pen in hand to make notes for recording and repeating, and on the other hand that the professor has the most unlimited liberty in teaching what and how he pleases. There is naturally a great deal of danger in that, but a method prescribed to the teacher in spite of his will, disposition or capacity, would bear even more bitter fruits than a method of his own choice, though it were not the best. Yet he is not free in choosing the author, at least so far as he might interfere with other classes, or transgress the established rule of the college on account of the successive order to be observed. That order, adopted by most of them according to the agreement of the most competent judges, is generally the following:

IV.	Cornelius Nepos, (Phaedrus.)	IV.	Jacob's Reader.
III.	Caesar. Ovid's Metamorphoses, (Tristia.)	III.	Xenophon. Lucian. Odyssey.
II.	Cicero's Orations, or Cato and Laelius. Sallust or Livy. Virgil.	II.	Herodotus. Plutarch. Plato's Crito or Io. Iliad.
I.	Cicero's Rhetoric or Philos. Tacitus. Horace.	I.	Thucydides. Demosthenes. Plato. (Euripides.) Sophocles.

The two different methods of reading the classics, the thorough and the cursory, and the third running between them, are promiscuously used. Let us compare the first with the artillery, the second with the cavalry, and the third with the infantry, as the head, the feet, and the large body of the army. The first is a heavy, cumbersome mass, moving slowly yet reaching far, and the only means to make a fortress surrender. It requires both learning and skill, and, if well directed, it breaks the battle-array of the enemies. So the first method is the chief instrument for making the pupil master of the classical field. It may appear tedious to stay long on the same spot, where the prospect invites to proceed, but the present place must be wholly conquered with all its environs, while the charms of the view around, the safety from an attack of enemies in the rear, and the consciousness of a sure and safe progress, will conquer the worst enemy, the vagrant laziness of mind. No grammatical point, which is not entirely subdued, is to be passed by, no beauty of style to be overlooked, no nicety of thought to be slighted. It is true, not a little learning and taste is required from the officer, to make it interesting and useful; for how can he make others at home where he himself is a stranger? Or how may he avoid the danger of dwelling long on those points with which he has been made acquainted just before, and of caring little about those which did not attract his special attention, as already known to him superficially? Instances of abuse have not been rare in Germay. Some dictated all the later notes of the best commentators; perhaps one whole page to explain a single verse, and added at last their own judgment; others made the foreign wisdom their own, indeed, but it was not well digested, it could not inspire much interest in classical learning. Still, notwithstanding all this, the danger was not so great as one might imagine, there being a variety of classical teachers in every gymnasium, who hold one another in check, or rather who supply the deficiencies of each other. Thus it happens even, that their foibles turn out as so many advantages for the student.

The cursory method we have compared with the cavalry. It is good to reconnoitre the battle-field, to take possession of open places, and to destroy the enemy, when he is put to flight. No one should expect more from cursory reading. On the whole, it is not often used in the German colleges, because it contains not much of educational element, either for character or for learning. However, we think it the best way to let it precede, and follow the first method. It acquaints the pupil somewhat with the language and tone of the writer, and thereby makes the following more thorough reading easier and more interesting. Here the professor must carry the student over the fences and ditches. It should follow not only that the pupil may enjoy the reading of a larger piece of poetry or prose, and excite lasting attachment to the author, but that it may throw light upon the past subjects, make suggestions better understood and confirm the knowledge of language and style by silent repetition. Here the student must carry the professor, who, however, will make a wise use of bridle and spur. Rapidity of mind and elegance of taste are the chief requisites for giving to the third method of reading the right turn and the best success. Every thing good lies between extremes. Most teachers are common foot soldiers, neither laden with learning nor rapid in tasteful perception; neither fond of standing too long, nor of running too quickly, but they go duly on, as they are commanded by learning or custom. In modern times much has been done toward improving the method by uniting the obvious advantages of the thorough and cursory plan, in order to read more of the author without losing the right understanding and the acquisition of the language.

For "author-lessons," a student is required to know all the necessary words and be able in some degree to translate the following chapter. Four or five perhaps get parts of it for translating. This being done, the teacher commences explaining by asking whatever the character of the passage and the standing of the students allow. In the lower gymnasium the Latin prose is used for repeating and applying the rules spoken of in the Syntax lessons; in the upper gymnasium grammatical remarks occur seldom, more frequently rhetorical, æsthetical and historical ones. Etymology is never lost sight of, but it is confined to Latin and Greek stems. The students are expected to make notes, to read them over at home, and are sometimes directed to learn the passages that have been read by heart.

The editions of the classics used in the lessons are commonly without notes, and the use of such, as have all somewhat difficult passages explained is forbidden during the lesson-time. A good teacher keeps the whole class alive chiefly by questioning, and only when nobody has found the right or could find it, he formally begins to instruct. For although the professor is the only source of instruction, the character of classical teaching is such, that it may be easily interwoven with any kind of examination, and few questions, proposed by an experienced and skillful teacher, will be so difficult as not to find among the many youths of different acquirements and abilities, at least one who could give a satisfactory answer. We mean an answer that gives a part of the point in question, and leads successively to the full explanation, which afterward the professor in a few words recapitulates. But however correct the single remarks may be, that instruction only deserves to be called skillful and elegant, where every following question seems to originate from the preceding, and the whole series of remarks appears to be more or less internally connected.

In Prima, *criticism* is practiced to some extent, and, we believe, not unsuccessfully. To be sure to discern hair-breadth philological niceties, or to judge of the genuineness of a passage or a single word, belongs to the sphere of the professional study of philology; yet not only to give the result with some suggestions about the foregoing researches, but also to lay before the seniors such critical points to be decided as are not beyond the reach of their learning, will undoubtedly strengthen the power and acuteness of judgment in an interesting and profitable manner. But the judgment of the professor himself respecting the choice of the critical point of discussion, and the manner in which it is managed, are in the department of education, where method is every thing, the chief point to be inquired after. That young men of about twenty years acquainted with language and literature, are qualified to play sometimes the part of critics, is evident, and they ought to be practiced in it.

There will be more doubt about the utility of *speaking Latin* in Prima and partly in Secunda. Of course, the authors are translated into German, but generally explained in Latin. Besides, there is one hour a week set apart in some colleges for Latin conversation. It is true that the students become more familiar with the language in many respects, but the correctness of language and elegance of style are not always much improved by it. Agreeable as that acquirement is, and even necessary as yet for the students to understand the Latin lectures in the university, it is to be considered as subordinate to the achievement of a correct style, and only when the speaking is well balanced by continual exercises in writing, will it exert a great and wholsome influence, and become an essential part of the classical discipline of mind.

The exercises in *writing Latin* are duly appreciated in the German gymnasia. In Quarta and Lower Tertia, where the syntax is accurately reviewed in three or four hours a week, short exercises, suitable to fix the learned rules by application, are made during and between the lessons. A translation-book, not unlike the English Arnold with rules, is often used besides Zumpt's grammar, but the right understanding and the best exercises come from the teacher. In Upper Tertia and Lower Secunda the German text for translation is prepared by the teachers, in which some care is taken of the weekly reading and of the still fluctuating grammatical precepts. But in Upper Secunda and Prima, at least for two years, the Latin exercises are *free compositions* on a given theme. They are not always weekly, but half-monthly and monthly, in order to allow a longer time to larger compositions of six to ten pages, while the review of the same is going on usually two hours a week. These free exercises are not only an important, but also a pleasant task to the advanced scholar, who is beyond the reach of a grammatical blunder, in the possession of all the necessary words, and fond of moving freely in imitating what he has read and in expressing what he thinks best. And only to him they are useful to whom they are easy. Another help for writing Latin are the "*Extemporalia*," in which the students, as the name indicates, is obliged to write immediately down in Latin what they are told in German. This quiet combination and exchange of the two languages promotes greatly the faculty of thinking in Latin, necessary to speaking and writing. In one gymnasium we noticed the usage of spending in Prima one hour of the week in making a brief composition on a given subject, read in Cicero or spoken of during the week. The short time does not allow deep reflection, still it is long enough to the eager student, to make a few periods chiefly with regard to the form, and to apply some elegancies of style remembered from the last Cicero-lesson. It is a matter of course, that free compositions in the German are made besides, and that they rank quite as high.

The teaching of the *Greek* reveals naturally a somewhat different character, as no reproduction either for speaking or for writing is intended. There is some writing in and for the grammar-lessons throughout all classes, (*Rost* and *Wüstemann's* Exercises are much used,) but it is easily perceived that the writing is by-work, and tends only to make authors and language better understood. Thus it happens that a young man who reads Homer without wanting the aid of a lexicon, is sometimes in some perplexity to find a common Greek word, if asked in German. And the Greek is not the worse for it, provided that on the one hand is gained, what on the other is lost. It may be supposed, however, that the philologist in the university is so well acquainted with the language by reading and explaining Greek writers, that he will be able to write and even to speak Greek tolerably, if compelled to do so.

In order to understand and enjoy poetry, one hour is appointed in every class for prosody and metre. The student of Tertia who commences reading Ovid, is prepared for it by a long practice of the rules of prosody and of the laws of hexameter distichs. In Secunda it is required of the student to make free verses, hexameters or distichs. Having been introduced into the variegated world of lyrical forms, and enabled to read and appreciate the odes of Horace, the "Primaner" makes little poems of whatever metre, heroic, lyric or dramatic. We hold these lessons and exercises to be very useful, not only to get a correct idea of the poetical but also of the general rhythmical laws of the languages, without which a nice understanding of prose as well as of poetry is next to impossible.

Let us add a few words in regard to private studies. Our readers who have rightly inferred from the large number of lessons, that a German gymnasiast has plenty of work in order to do his public task conscientiously, and very little time left for fancy-studying, provided that he takes a sufficient time for meals, rest, and exercise. On the other hand, it is obvious, that not all the authors mentioned above can be read. Yet some acquaintance with all of them is required, and the view is generally taken by the professors, that the reading which can not be done in the lessons ought to be supplied at home. The student, therefore, must work pretty hard to be well prepared for the lessons, to have his weekly exercises, as German and Latin compositions, Greek; metrical and mathematical lessons, exactly studied, and to give, as it is required in some colleges, every month a good account of his private studies. There he presents extracts of an author with compositions of any kind he pleases, in prose or poetry; and where no such account is given publicly, private studies of the same sort are nevertheless expected. Besides the morning and night hours, the free afternoons of Wednesday and Saturday afford a longer series of study-hours. There are in the whole about eight weeks vacation. The results of the home-studies are, of course, soon perceived by teacher and pupil, and the loss of time is doubly compensated by the rapid progress and by the ability to make the best exercises in the shortest time. Still, we do not mean merely free and independent reading and working, but chiefly the free spirit of diligence used independently of the necessities of school, yet in doing the school-work.

The boy of fourteen is now a young gentleman of twenty years. Having made his lawful run, and having the permission of the professors to graduate, he must bite a sour apple and get examined. This "examen maturitatis" is somewhat more difficult and more important than the usual semi-annual or annual examinations, for it will declare him prepared for independent and professional studies, and also decide on the degree of his maturity, ("imprimis," "omnis," "satis," dignus.) All however have laid a good foundation for any kind of scholarship, or likely to read with ease the New Testament (such as are to be theologians are taught the Hebrew in Prima,) the Corpus Juris and Celsus, can understand a Latin lecture or oration, and retain so much during their professional life in the university, as to be able generally to speak Latin after three years, in the theological, juridical or medical examinations.

The classical education, as common to all scholars, is here closed. But for those who intend devoting their lives to classical learning and teaching, the philological training continues in the universities.

TABLE OF LESSONS IN THE BLOCHMANN-VIZTHUM COLLEGE, (1840,) AT DRESDEN.

IV.

	H.		H.		H.
1. Religion	3	C. German	2	5. Natural Hist.	1
2. Languages:		D. French	3	6. Geography	2
A. Greek	6	3. Mathematics:		7. Drawing	2
B. Latin		(a) Algebra	1	8. Singing	2
(a) Cornelius Nep.	4	(b) Arithmetic	1	9. Gymnastics	2
(b) Grammar	3	(c) Geometry	2	10. Dancing	2
(c) Prosody	1	4. History	3		—
					40

III.

1. Religion	2	(c) Grammar	4	5. Natural Hist.	1
2. Languages:		(d) Prosody	1	6. Geography	2
A. Greek,		C. German	2	7. Drawing	1
(a) Homer	2	D. French	3	8. Singing	2
(b) Lucian	2	3. Mathematics:		9. Gymnastics	2
(c) Grammar	3	(a) Algebra	1	10. Dancing	1
B. Latin,		(b) Arithmetic	1		—
(a) Caesar	4	(c) Geometry	2		40
(b) Ovid	2	4. History	3		

II.

1. Religion	2	(b) Cicero	2	(a) Algebra	1
2 Languages:		(c) Sallust	2	(b) Arithmetic	1
A. Greek,		(d) Grammar	3	(c) Trigonometry	2
(a) Iliad	2	(e) Prosody	1	4. History	2
(b) Herodotus	2	C. German	2	5. Natural Hist.	2
(c) Grammar	3	D. French	3	6. Gymnastics	2
B. Latin,		E. English	2	7. Singing	2
(a) Virgil	2	3. Mathematics:		8. Dancing	2
					—
					40

I.

1. Religion	2	B. Latin,		E. English	2
2. Languages:		(a) Tacitus	2	3. Mathematics:	
A. Greek,		(b) Cicero, phil. cursor.	1	(a) Stereometry	2
(a) A) Sophocles B) Euripides	2	A) Cic. philos. B) Cic. epis.	2	(b) Higher proport.	2
				4. History	2
(b) A) Thucydides B) Demosthen.	2	(c) Horace	2	5. Natural phil.	2
		(d) Exercises	2	6. Gymnastics	2
(c) Homer cursor.	1	(e) Latin speak.	1	7. Singing	2
(d) Exercises	1	C. German lit.	3	8. Dancing	2
(e) Greek Antiquit.	1	D. French	2		—
					40

PROGYMNASIUM.

	II.	I.		II.	I.
Religion	4	,,	Bot., Zool., Min.,	2	,,
Latin	6	9	Drawing	2	,,
German	3	,,	Calligraphy	2	,,
French	4	,,	Gymnastics	3	,,
Arithmetic	3	,,		—	Singing 2
Geography	2	,,		34	—
					33

XIII ORGANIZATION AND INSTRUCTION

OF

BURGHER SCHOOL IN LEIPSIC, SAXONY.

In Leipsic the public primary schools are of three sorts, the first for the use of the children of the poor who receive supplies from the public; the second for those who, not belonging to this class, would still be burthened by the payment of a school fee; the third, the burgher class. Many of the schools are endowed. The Burgher school is considered by Dr. Bache one of the most complete in its plan of organization in Germany. He thus describes it:

This school is designed to educate children of the middle ranks of society, and those of the upper ranks whose parents wish them to receive a public education.

It is composed, 1st. Of an *elementary school* for both boys and girls, which pupils should enter at six years of age. There are three classes, in the lowest of which the two sexes are taught in the same room. The pupils are retained, in general, a year and a half to two years, leaving this department at eight years of age and proceeding to the next higher.

2d. The *burgher school* proper. Here the boys and girls receive instruction separately. There are six classes for boys, each of which occupies a year. After passing through the three lower classes, the sixth, fifth, and fourth, the pupils begin separate courses, according to their inclination or supposed destination in life. This is at about eleven years of age. Those who are intended for trades, and whose school education must finish at fourteen, to enable them to begin their apprenticeship, pass through the remaining classes, the third, second, and first of the burgher school.

Other boys who are intended to pursue higher departments of mechanical occupations, or for manufacturers, clerks, miners, foresters, stewards of estates, merchants, artists, civil officers, &c., pass into the department called the "*real school*," terminating their course there at about sixteen years of age. Others who are intended for the learned professions go at eleven to a gymnasium, pass through its classes at eighteen, and enter the university, being prepared for a profession at twenty-one.

3d. The "*real school*" or higher burgher school. In this there are four classes, intended to occupy together about five years, and to prepare the pupils to enter a commercial, polytechnic, architectural, or mining academy, according to his vocation.

Omitting the girls' school, the scheme thus marked out will appear better by the following skeleton:

Elementary School.—Three classes. Pupils 6 to 8 years of age.

Burgher School.—Three classes. Pupils 8 to 11 years of age.

Higher Burgher School.—Three classes. Pupils 11 to 14 years of age. The pupils are apprenticed on leaving the school. Or,

Real Schools of four classes. Pupils 11 to 16 years of age, and pass to a *polytechnic*, *commercial*, *mining*, *architectural*, *&c.*, *academy*. Or,

Gymnasium (grammar school) of six classes. Pupils 11 to 18 years of age. They pass to the *university*, where, after a course of three years, they may be admitted to one of the learned professions.

A plan at once convenient and rational is thus marked out for a youth's education, depending upon the views of his parents, their circumstances, and his own talents and dispositions. The first four named schools are united in one building, erected by the liberality of the town of Leipsic, and have the same director.

The subjects and the order of succession of the different courses are good.

there is a constant reference to the ultimate object of the instruction, and no branches are inserted in the programme merely for the purpose of preparing pupils for the higher classes of other schools. It is, on the contrary, considered better that pupils should obtain access to them through the lower classes of the same school. By detaining them here, injury would be done to both schools. The primary instruction which is common to all the pupils, embraces a moderate number of branches, and terminates at an age when experience has shown that the culture by the ancient languages should be no longer postponed, in the case of those who are intended for the learned professions, and when the studies of others destined for the arts should take a different direction. The question, whether the proper age has been adopted for this separation is wholly one of experience, and the facts in reference to it will be submitted in speaking of secondary instruction.

The subjects taught and the time they occupy in the *elementary school* agree very closely with those of the first two classes* in the seminary school of Berlin. Drawing on slates and singing are both introduced here, constituting an advantage over the other; they are brought in as a relief from intellectual exercises, and as objects of direct attainment. The number of hours of duty is but four on four days of the week, and two on each of the others. These might, I think, be increased to the standard of the primary schools, twenty-four hours per week, without fear of over-tasking the pupils; and if a portion of the time were bestowed on judiciously arranged exercises, the physical as well as moral education would be improved. The moral training of the play-ground is not as yet an element in any of the German systems. The same master teaches in succession all the studies of his class.

The pupils pass from the third to the second class at the end of six months, a change which is favorable to their progress, since at this early age strongly marked differences appear soon after entering the school. With a similar view of fitness in regard to their age, the plan of daily exercises is not rigorously prescribed, but is merely indicated to serve as a general guide in relation to the time to be devoted to the different subjects.

I found occasion in this school to remark the danger of defeating the exercises of induction, by making them merely mechanical, by the reception of fixed answers to invariable questions; and, also, the necessity of selecting very simple melodies for the early exercises in singing; beyond these, the exertion of the voice of the child, so far from being a physical benefit, is a positive injury. My preference for beginning arithmetic with a reference to sensible objects, that is, by denominate numbers, was again strongly confirmed.

It might seem impossible to determine how many pupils of a definite age might, with advantage, be intrusted to the care of one teacher under a given method of instruction. The average for branches of the same kind is not, however, so wide from the extremes as might at first be supposed. In the simultaneous method, the skill of the teacher is the chief determining quality. The various subordinate ones depending upon the pupil, the particular exercise, the arrangements in reference to ventilation, warmth, &c., will readily suggest themselves. In the midst of all these, the average shows itself to attentive observation. It is easy to see how many pupils are attending to what is going on, and if the teacher be skilled in his art, the number is thus obtained, which a class should not exceed. For the intellectual exercises, I obtained in this way from thirty-five to forty in the German schools as the maximum number of an elementary class; the observation in reference to the classes of the best teachers here confirmed these numbers. In the mechanical branches, the number of pupils may be very much increased, without material injury to the instruction, and hence, the classification which suits them is not adapted to the intellectual departments.

The principal subjects of instruction in the *burgher school*, including both the lower and higher departments, are religion and morals, German, French, arithmetic, geometry, natural history, history, geography, calligraphy, drawing, and vocal music. and to these are added in the highest classes technology and physics. The list differs from that of the Dorothean higher city school, and the seminary school of Berlin, in the omission of Latin and the introduction of technology and physics, both which differences mark the proper character of the school. It is not intended that the upper classes shall prepare pupils for the higher classes of the gymnasium, but that those who are to be trained in the classical studies shall have previously passed to the lower classes of the gymnasium, where they properly belong, and where they can obtain the instruction appropriate to their objects. The distribution of time is shown in the annexed table, which is similar in its arrangement to those already given.

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* See page 133.

PLAN OF INSTRUCTION IN THE HIGHER AND LOWER BURGHER SCHOOLS OF LEIPSIC.

SUBJECTS OF INSTRUCTION.	BURGHER SCHOOL FOR BOYS.						Total.
	Higher School.			Lower School.			
	First Class, 13 and 14 years of age.	Second Class, 12 and 13 years of age.	Third Class, 11 and 12 years of age.	Fourth Class, 10 and 11 years of age.	Fifth Class, 9 and 10 years of age.	Sixth Class, 8 and 9 years of age.	
Religious Instruction,	4	4	4	4	4	4	24
German Language,*	5	6	8	6	8	6	39
French,	2	2	2				6
Arithmetic,	4	4	4	4†	6	6	28
Geometry,	2	2	2				6
Natural History,	1‡	3	2	2	2	2§	12
Technology,	2						2
Physics,	2						2
Geography,	2	2	2	2		2	10
History,	2	2	2	2	2		10
Writing,	1	2	2	3	3	4	15
Drawing,	4	4	3	3	2	1	17
Singing,	2	2	2	2	1	1	10
Total,	33	33	33	28	28	26	

The increase in the number of branches as the pupils rise to the upper classes, seems to me judiciously made in this plan. At the same time, the number of hours per week is gradually increased, and perhaps beyond the due limit, though it would require longer attention than I could give to this institution to affirm positively that this is the case. Comparing the programme with that of the classes of corresponding age in the seminary school of Berlin, a general similarity appears throughout, although each has distinctive features. In the sixth class, of which the pupils are of the same age with those of the fourth in the seminary school, a few lessons of natural history and geography ("knowledge of home") are given, and with advantage. The number of hours per week devoted to the different studies is nearly the same in both schools.

In the fifth class, natural history and history are introduced in the burgher school, and in its corresponding classes in the seminary school, Latin, French, and geometry. The number of hours of arithmetical instruction is greater in this school than in the other.

A similar difference continues in the fourth class, as it is not the object to begin French until after those who leave the school at fourteen have terminated their course. The elementary exercises of geometry are begun in this class of the burgher school.

The third class is the first or lowest of the *higher burgher school*, and the programme of this and of the second agree in the main with those of the seminary school. Greater attention is devoted to religious instruction, to arithmetic, and drawing, and less to French, in the burgher than in the seminary school. The number of hours given to the first named branch in the burgher school is double that in the other, and the number to the last only one-half, which is, probably, too small an allotment for the object. Technology and physics are taken up in the first class of the Leipsic school, and Latin is continued through all those of the Berlin institution.

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* This includes the exercises of reading.
† In this is included an hour of preparatory exercises for geometry.
‡ Anthropology.
§ Elementary natural history and natural philosophy.

In regard to the plan of treating the subjects of instruction, the following is a comparison of the two schools:

1. In *religious instruction*, the general train is the same, being more detailed in the burgher school, and having a special course of morals in the higher classes. In general, the German institutions are very free from an objection urged to a course of religious instruction, in a former part of my report, namely, that it was addressed rather to the understanding than to the heart. There is no express instruction in morals, but it is because the morals of the Scriptures mingle with their daily lessons, and no special course is needed, until a more advanced age, than that embraced by these schools in general.

2. The course of *German* language (including composition) and reading, is parallel with that of the Berlin seminary school, except in the two higher classes. In these a turn is given to the compositions to adapt them to the peculiar destination of the pupils, who are also exercised in speaking, by reading dialogues and brief dramatic pieces. In a country enjoying a constitutional government, the art of public speaking may not be neglected by its citizens.

3. The course of *French*, in the burgher school, struck me as rather defective, probably from the small amount of time which is devoted to it, as already stated.

4. *Mathematics.*—The courses of arithmetic and geometry are also parallel with those in the seminary school. The mathematical studies here are extended further in Algebra, and include logarithms, mensuration, and surveying.

5. *Natural history, physics, and technology.*—The early beginnings of this course are exercises in induction, directed particularly to awaken habits of observation and reflection. Later, some of the more interesting parts of natural history are taken up, and, finally, the subject is treated somewhat systematically, and a technological direction given to it. The physics consists of such popular notions of natural phenomena as should be possessed by all. The technology explains the processes of some of the common arts and trades.

6. The course of *geography* begins like that already described at Halle, but subsequently pursues the inverse order, giving an idea of the earth as a part of the world, its form, motions, &c. Director Vogel has conceived the plan of presenting the parts of the earth always in their just proportions, as upon the sphere, and has contrived for this purpose a globe which may be divided through the equator or through a meridian. The hemisphere being suspended with its plain surface against the wall, presents the convex surface, with its delineations, in true proportion. This idea he proposes to extend, by substituting for maps, in the early recitations, portions of spherical surfaces, with the delineations of the countries upon them.

After taking a general survey of the different countries, especially those of Europe, the pupils pass to the geography of Germany. They then enter more into the details of the countries of Europe, draw maps, and, finally, study mathematical and physical geography in a scientific form. To carry out his views of the connection of history, natural history, and ethnography with geography, director Vogel has prepared a school atlas upon a new plan. The vignettes surrounding the maps contain illustrations of these different kindred branches, and address the eye of the learner, thus impressing the memory with their connection with the countries delineated. For example, around the maps representing the different quarters of the globe are the characteristic plants, animals, and men of the different regions near to the portions of the country where they are found. The more detailed maps of the countries give a view of their natural productions, represent the more prominent or characteristic qualities of the nation, the arts which flourish more particularly among them, and give medallions portraying their great historical characters, or including the names of their distinguished men, or the dates of important historical events.

7. The *historical* course, as far as it is distinct from that last mentioned, agrees, in its general features, with that of the Berlin seminary school, being, however, more minute.

8. *Writing and drawing.*—In learning to write, the classes begin with small hand, and succeed better than is usual upon that plan, probably from the attention, at the same time, to drawing. The last named branch is taught by Schmidt's method. The teacher has made an admirable collection of models in wood and plaster, of geometrical solids, of machines, of buildings, bridges, and the like, of ornaments, &c., and brings his class forward in this kind of drawing very rapidly. Only the more elementary parts of these collections, however, are used for the classes of the burgher school.

9. Vocal music is taught as in the other schools

The particular method which the teacher pursues in his instruction is left much to the individual, the director remarking, justly, that if he is competent to his place, his method must be good. He has for his guide, however, a programme indicating the degree of proficiency which his class must show at the end of the year.

In the lower classes of a school like this, if the pupils have been previously well trained, a larger number can be instructed by the simultaneous method than in the elementary classes, in a subject of the same kind. This advantage is lost as the course becomes higher, and the scale turns again in proportion as individual teaching becomes more desirable, with increased individual development and differences in mental quality. The simultaneous method requires watchfulness on the part of the teacher, not to deceive himself as to the progress of his class. It is, of course, rarely that a question can not be answered by some of them, while the mass may be entirely ignorant in relation to the subject. I have seen both skill and attention fall into the mistake to which I refer.

Between each of the hours of recitation there are a few minutes of interval, during which the classes leave the school-rooms. This is an arrangement favorable to health, and worthy of imitation.

The lower classes have each a teacher for all the subjects, a system which is gradually changed in the higher classes for that of a teacher for a single subject. Drawing and singing are taught by special instructors in the higher classes.

The classes for girls are similar to those described, the instruction being modified so as to render it more applicable to the sex.

The plan of instruction in the "*Real School*," the highest of which this establishment is composed, can hardly be said to have received, as yet, its ultimate form. The school belongs to the class of secondary instruction, running parallel with the gymnasium, and preparing for the university of the arts, or polytechnic school, as the other prepares for the university of the learned professions. The branches taught, and which I may enumerate, to complete the description of the institution, are,

1. Religious instruction. 2. German. 3. French. 4. English. 5. Mathematics, including algebra; geometry, trigonometry, plane and spherical; practical surveying; a review of arithmetic and technical arithmetic. 6. Physics and chemistry. 7. Natural history. 8. History. 9. Geography. 10. Calligraphy. 11. Drawing. 12. Vocal music.

The separate branches in this school are in general taught by special instructors. The methods of Pestalozzi are considered by the director as less applicable to the higher than to the lower courses. But I doubt this, for though much less frequently applied, I have seen them used with good effect in advanced courses. The opposite method takes up less time if the object be to communicate positive knowledge, and the importance of this object certainly increases, and even becomes paramount, in the later parts of the student's career. The objection urged to this plan does not apply in the case of those subjects which are continuous through a series of years, but to such as are broken up into a number of kindred branches, the elements of which are to be taught at different, and even at advanced stages of the course.

The plan of special study hours for those whose parents wish them to be prepared for their lessons under the direction of a teacher, has been adopted in this school.

XI. ELEMENTARY EDUCATION IN SCOTLAND.

HISTORICAL SKETCH.

The parochial schools of Scotland have been the pride of her own people and the admiration of enlightened men in all countries. The foundations of the system were laid in 1494. In that year it was enacted by the Scotch Parliament, that all barons and substantial freeholders throughout the realm should send their children to school from the age of six to nine years, and then to other seminaries to be instructed in the laws; that the country might be possessed of persons properly qualified to discharge the duties of sheriffs, and to fill other civil offices. Those who neglected to comply with the provisions of this statute were subjected to a penalty of £20. In 1560, John Knox and his compeers hold the following memorable language, in the "First Book of Discipline," presented to the nobility.

> "Seeing that God has determined that his kirk here on earth shall be taught, not by angels, but by men; and seeing that men are born ignorant of God and of godliness; and seeing, also, that he ceaseth to illuminate men miraculously, of necessity it is, that your honors be most careful for the virtuous education and godly up-bringing of the youth of this realm. For as they must succeed to us, so we ought to be careful that they have knowledge, and erudition to profit and comfort that which ought to be most dear to us, to wit, the kirk and spouse of our Lord Jesus Christ. Of necessity, therefore, we judge it, that every several kirk have one schoolmaster appointed; such an one, at least, as is able to teach grammar and the Latin tongue, if the town be of any reputation. And further, we think it expedient, that in every notable town, there should be erected a *college*, in which the arts at least of rhetoric and logic, together with the tongues, be read by sufficient masters, for whom honest stipends must be appointed; as also that provision be made for those that are poor, and not able by themselves or their friends, to be sustained at letters.
>
> The rich and potent may not be permitted to suffer their children to spend their youth in a vain idleness, as heretofore they have done; but they must be exhorted, and, by the censure of the kirk, compelled to dedicate their sons by good exercises to the profit of the kirk, and commonwealth; and this they must do, because they are able. The children of the poor must be supported and sustained on the charge of the kirk, trial being taken whether the spirit of docility be in them found, or not. If they be found apt to learning and letters, then may they not be permitted to reject learning, but must be charged to continue their study, so that the commonwealth may have some comfort by them; and for this purpose, must discreet, grave, and learned men be appointed to visit schools, for the trial of their exercise, profit, and continuance; to wit, the ministers and elders, with the best learned men in every town. A certain time must be appointed to reading and learning the catechism, and a certain time to grammar and to the Latin tongue, and a certain time to the arts of philosophy and the other tongues, and a certain time to that study in which they intend chiefly to

travel for the profit of the commonwealth; which time being expired, the children should either proceed to further knowledge, or else they must be set to some handicraft, or to some other profitable exercise."

In 1615, an act of the Privy Council of Scotland empowered the bishops, along with the majority of the landlords or heritors, to establish a school in every parish in their respective dioceses, and to assess the lands for that purpose. This act of the privy council was confirmed by an act of the Scotch Parliament, in 1633; and under its authority, schools were established in the lower and the more cultivated districts of the country. But the system was still far from being complete; and the means of obtaining elementary instruction continued so very deficient, that it became necessary to make a more complete and certain provision for the establishment of schools. This was done by the famous act of 1696, the preamble of which states, that "Our Sovereign Lord, considering how prejudicial the want of schools in many places has been, and how beneficial the establishing and settling thereof will be to this church and kingdom, therefore, his Majesty, with advice and consent, &c." The act went on to order, that a school be established, and a schoolmaster appointed in every parish; and it further ordered that the landlords should be obliged to build a school-house, and a dwelling-house for the use of the master; and that they should pay him a salary, exclusive of the fees of his scholars; which should not fall short of *5l.* *11s.* *1d.* a year, nor exceed *11l.* *2s.* *2d.* The power of nominating and appointing the schoolmaster was vested in the landlords and the minister of the parish; and they were also invested with the power of fixing the fees to be paid him by the scholars. The general supervision of the schools was vested in the presbyteries in which they are respectively situated; who have also the power of censuring, suspending, and dismissing the masters, without their sentence being subject to the review of any other tribunal.

It has been usually expected that a Scotch parish schoolmaster, besides being a person of unexceptionable character, should be able to instruct his pupils in the reading of English, in the arts of writing and arithmetic, the more common and useful branches of practical mathematics, and that he should be possessed of such classical attainments as might qualify him for teaching Latin and the rudiments of Greek.

It would be no easy matter to exaggerate the beneficial effects of the elementary instruction obtained at parish schools, on the habits and industry of the people of Scotland. It has given to that part of the empire an importance to which it has no claim, either from fertility of soil or amount of population. The universal diffusion of schools, and the consequent education of the people, have opened to all classes paths to wealth, honor and distinction. Persons of the humblest origin have raised themselves to the highest eminence in every walk of ambition, and a spirit of forethought and energy, has been widely disseminated.

At the period when the act of 1696 was passed, Scotland, which had suffered greatly from misgovernment and religious persecutions under the reigns of Charles II. and his brother, James II., was in the most unprosperous condition. There is a passage in one of the discourses of the celebrated Scotch patriot, Fletcher of Saltoun, written in 1698, only two years after the act for the establishment of parochial schools had been passed, that sets the wretched state of the country in the most striking point of view.

> "There are, at this day in Scotland, besides a great many families very meanly provided for by the church boxes, with others who, by living upon bad food, fall into various diseases, two hundred thousand people begging from door to door. These are not only no way advantageous, but a very grievous burden to so poor a country. And although the number of them be, perhaps, double to what it was formerly, by reason of this present great distress, yet in all times there has been about a hundred thousand of these vagabonds, who have lived without any regard or subjection, either to the laws of the land, or even those of God and nature. No magistrate could ever discover which way one in a hundred of these wretches died, or that ever they were baptized. Many murders have been discovered amongst them; and they are a most unspeakable oppression to poor tenants, who, if they do not give bread, or some kind of provision, to perhaps forty such villains in a day, are sure to be insulted by them. In years of plenty many thousands of them meet together in the mountains, where they feast and riot for many days; and at country weddings, markets, burials, and other the like public occasions, they are to be seen, both men and women, perpetually drunk, cursing, blaspheming, and fighting together. These are such outrageous disorders, that it were better for the nation they were sold for the gallies or the West Indies, than that they should continue any longer to be a burden and a curse upon us."

No country ever rose so rapidly from so frightful an abyss. In the autumn circuits or assizes for the year 1757, no one person was found guilty, in any part of the country, of a capital crime. And now, notwithstanding the increase of population, and a vast influx of paupers from Ireland, there are very few beggars in the country; nor has any assessment been imposed for the support of the poor, except in some of the large towns, and in the counties adjoining England; and even there it is so light as scarcely to be felt. This is a great and signal change. We can not, indeed, go quite so far as those who ascribe it entirely to the establishment of the parochial system of education. It is, no doubt, most true, that this system has had great influence in bringing about the change; but much must also be ascribed to the establishment of a regular and greatly improved system of government; to the abolition of hereditary jurisdictions, by the act of 1748; and to the introduction of what may, in its application to the vast majority of cases, be truly said to be a system of speedy, cheap and impartial justice. Certainly, however, it was the diffusion of education that enabled the people to avail themselves of these advantages; and which has, in consequence, led to a far more rapid improvement than has taken place in any other European country.

The General Assembly of the Church of Scotland has ever taken an active interest in the parochial schools. Immediately after the passage of the act of 1696, the Presbyteries were instructed to carry it into effect, and *Synods*, to make particular inquiry that it was done. In 1704, the Assembly undertook to supply schools to such part of the highlands and islands as could not be benefited by the act of 1696. In 1705, ministers were ordered to see that no parents neglected the teaching of their children to read. In 1706, it was recommended to such as settled schoolmasters, "to prefer men who had passed their course at colleges and universities, and have taken their degrees, to such as have not." In 1707, Synods and Presbyteries were directed to send into the General Assembly returns of the means and condition of the parochial schools.

The internal dissensions of Scotland and other causes, however, withdrew the public attention from the schools; and the advance of society in other respects, and the want of a corresponding advance in the wages of teachers, and the internal improvement of the schools, all combined to sink the condition of parochial education. In 1794, the General Assembly became roused to the subject. Visitation of the schools was enjoined on the clergy; and they were particularly instructed to inquire into the qualifications of the teachers. In 1802, the Assembly issued the following declaration, &c.:

> "That parochial schoolmasters, by instilling into youth the principles of religion and morality, and solid and practical instruction, contribute to the improvement, order, and success of people of all ranks; and are therefore well entitled to public encouragement: That from the decrease in the value of money, their emoluments have descended below the gains of a day laborer: That it has been found impossible to procure persons properly qualified to fill parochial schools: That the whole order is sinking into a state of depression hurtful to their usefulness: That it is desirable that some means be devised to hold forth inducements to men of good principles and talents to undertake the office of parochial schoolmasters: And that such men would prove instrumental in counteracting the operations of those who may now, and afterward, attempt to poison the minds of the rising generation with principles inimical to religion, order, and the constitution in church and state."

In consequence of this declaration by the Church of Scotland, and of the complaints which were sent up from all parts of the country, Parliament, in the course of the next session, passed the famous act of 1803, which ordains as follows:

> "That, in terms of the act of 1696, a school be established, and a schoolmaster appointed in every parish, the salary of the schoolmaster not to be under three hundred marks, (16*l.* 13*s.* 4*d.*.) nor above four hundred, (22*l.* 4*s.* 5*d.*:) That in large parishes, where one parochial school can not be of any effectual benefit, it shall be competent for the heritors and minister to raise a salary of six hundred marks, (33*l.* 6*s.* 8*d.*,) and to divide the same among two or more schoolmasters, as circumstances may require: That in every parish the heritors shall provide a school-house, and a dwelling-house for the schoolmaster, together with a piece of ground for a garden, the dwelling-house to consist of not more than two apartments, and the piece of ground to contain not less than one-fourth of a Scots acre; except in parishes where the salary has been raised to six hundred marks, in which the heritors shall be exempted from providing school-houses, dwelling-houses, and gardens: That the foregoing sums shall continue to be the salaries of parochial schoolmasters till the end of twenty-five years, when they shall be raised to the average value of not less than one chalder and a half of oatmeal, and not more than two chalders; except in parishes where the salaries are divided among two or more schoolmasters, in which case the whole sum so divided shall be raised to the value of three chalders; and so *toties quoties* at the end of every twenty-five years, unless altered by parliament: That none of the provisions of this act shall apply to parishes, which consist of a royal burgh, or part of a royal burgh: That the power of electing schoolmasters continue with the heritors and minister, a majority of whom shall also determine what branches of education are most necessary and important for the parish, and shall from time to time fix the school-fees as they shall deem expedient: That the presbyteries of the church shall judge whether candidates for

schools possess the necessary qualifications, shall continue to superintend parochial schools, and shall be the sole judges in all charges against schoolmasters, without appeal or review."

In the year 1828, as the statute had provided, a small addition was made to the emoluments of the parochial schoolmasters, the *maximum* salary having been increased to 34*l.* 4*s.* 4*d.*, and the *minimum* to 25*l.* 13*s.* 3*d.*

The deplorable scenes of outrage and murder, which occurred in the streets of Edinburgh on the 1st of January, 1812, made the city clergy anxious to devise some means for diminishing the mass of crime and misery which was then brought to light. The scheme first proposed, and carried into execution, was to establish sabbath schools in all the parishes within the royalty, to which they gave the name of the Parochial Institutions for Religious Education. It was soon found, however, that the usefulness of these institutions was greatly limited, in consequence of a very great number of the children, for whose benefit they were intended, being unable to read. It was therefore proposed that, in connection with the sabbath schools, a day school should be established, which was accordingly opened on the 29th of April, 1813. This day school took the name of the Edinburgh Sessional School, from the circumstance of its being superintended by a minister or an elder from each kirk-session* in the city. The object of this school is to give instruction to the children of the poor in reading, writing, and arithmetic. Five gratis scholars may be recommended by each kirk-session; but the charge to all the others is sixpence per month. For many years the average attendance has been about 500; so that the school-fees, together with occasional donations, and a small share of the collections made annually at the church doors for the parochial institutions, have hitherto been sufficient to meet the ordinary expenses of the school. At first, no particular regulations were laid down for conducting the Sessional School; but after some years, the system of Dr. Bell was partially introduced. In the year 1819, circumstances led Mr. John Wood, Sheriff-deputy of the county of Peebles, to take an interest in the institution; and that benevolent individual began by degrees to give so much of his time and attention to it, that it soon became almost identified with his name. Under his superintendence, a large and commodious school-house was erected, and the system of teaching entirely re-modeled. In the latter department of his meritorious labors, Mr. Wood did not adopt the particular views of any one writer on education, but collected from all what he thought useful, and arranged it into a method of his own. So judicious is this plan of tuition, that it has not only been crowned with complete success in the Sessional

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* A *kirk-session* is the lowest ecclesiastical court in Scotland, and consists of the clergymen of each congregation, with a small number of lay elders: it generally meets on Sunday, after public worship. The next court, in point of judicial authority, is the *presbytery*, which consists of all the clergymen within a certain district, with a lay elder from each congregation: this court meets once a month. All the presbyteries within given bounds, form a still higher court, called a *synod*, which meets twice in the year. The *General Assembly* is the supreme judicial and legislative court of the Church of Scotland; it consists of clerical and lay representatives from the several presbyteries, of a lay elder from each royal burgh, and of a Commissioner to represent his Majesty, and holds its sittings at Edinburgh, once a year, for about a fortnight.

School, but has been introduced, either partially, or entirely, into many other public and private seminaries, and has, in fact, given a new impulse to the work of elementary instruction throughout Scotland.

In 1837 the Sessional School was, with the approbation of Mr. Wood, constituted the Normal School of the General Assembly, and persons intending to offer themselves as teachers in schools aided by the Education Committee, were furnished with opportunities of conducting classes daily, and of being instructed with pupils of the same standing with themselves. Previous to this movement, in 1835, the Educational Society of Glasgow had been formed, among other purposes, "for the training of teachers for juvenile schools." In 1842, both of these institutions were placed under the direction of the Educational Committee of the Church of Scotland, and the Committee of Council on Education, in that year, made a grant of $50,000 toward providing a new building for the Normal School at Edinburgh, and completing a building already commenced for the Normal School at Glasgow. The two buildings cost about $130,000. In the same year the General Assembly appointed a superintendent to visit the schools aided by the education committee, and voted to aid in the erection of not less than five hundred new schools in connection with destitute parishes.

In 1841, William Watson, Sheriff-substitute of Aberdeenshire, commenced a system of Industrial Schools in Aberdeen, which embraced within its comprehensive grasp, all classes of idle, vagrant children, and in its beneficent operation, cleansed in two years a large town and county of juvenile criminals and beggars. Out of this experiment has grown the system of Ragged and Industrial Schools, which are now found in many of the large towns of England, Scotland and Ireland.

The permanent support of public, and in some cases, free schools, is provided for in certain localities by the income of funds left by will or donation for this purpose. It has been estimated that the annual income of these funds amounts to near $100,000.

There are a number of local societies, such as that for "Propagating Christian Knowledge," founded in 1701, the Gaelic School Society, that of Inverness, Ayrshire, &c., instituted for the purpose of supplying destitute parishes with schools, and of aiding those already established. The sums annually appropriated by the societies, amount to about $75,000.

The Church of Scotland and the Free Church of Scotland, together, appropriate, out of permanent funds and contributions collected in the churches for this purpose, the sum of $50,000 in aid of schools in destitute parishes, and in educating teachers for the parochial schools generally.

In 1836, the sum of $50,000 was voted by Parliament in aid of private subscriptions for the erection of school-houses, and the establishment of Model Schools.

Notwithstanding all these efforts, the extension of the system of parochial schools has not kept up with the growth of the population, especially in the manufacturing towns, and the quality of the education given has not met the demands of educated and wealthy families.

One of the most interesting facts in the history of parochial schools in Scotland, wherever they were adequately maintained, was the attendance in them of children from families widely separated in outward circumstances—the rich and the poor, the laborer with his hands and the laborer with his head. The presence of the children of the better educated and wealthier classes gave importance to the school in the estimation of the poor, and raised the whole tone and standard of manners and intellectual culture within the school and village. It created, too, a bond of union in society, which is thus beautifully noticed by Lord Brougham, (then Henry Brougham,) in some remarks at a public dinner in Edinburgh, in 1825.

> "A public school, like the Old High School of Edinburgh, is invaluable, and for what is it so? It is because men of the highest and lowest rank in society send their children to be educated together. The oldest friend I have in the world, your worthy Vice President, and myself, were at the High School of Edinburgh together, and in the same class along with others, who still possess our friendship, and some of them in a rank of life still higher than his. One of them was a nobleman, who is now in the House of Peers; and some of them were sons of shopkeepers in the lowest parts of the Cowgate of Edinburgh—shops of the most inferior description—and one or two of them were the sons of menial servants in the town. There they were, sitting side by side, giving and taking places from each other, without the slightest impression on the part of my noble friends of any superiority on their parts to the other boys, or any ideas of inferiority on the part of the other boys to them; and this is my reason for preferring the Old High School of Edinburgh to other, and what may be termed more patrician schools, however well regulated or conducted." * *

Another distinguished pupil of this school remarks: "Several circumstances distinguished the High School beyond any other which I attended: for instance, variety of ranks; for I used to sit between a youth of a ducal family and the son of a poor cobler." This fact will distinguish good public schools of a superior grade, provided they are cheap, every where. The High School, like the parochial schools of Scotland, generally is not a free school, but the quarterly charge for tuition is small as compared with the actual cost of instruction in private institutions of the same grade. The fees payable in advance are £1. 1*s*. per quarter. The course of instruction embraces all the branches of the liberal education suitable to boys, from eight to sixteen years of age.

In connection with this mention of the High School of Edinburgh, we will introduce a few historical facts, which point back to a very early period for the origin of the system of parochial schools in Scotland. The funds out of which the edifice now occupied by the high school was built, and which was completed in 1829, at an expense of £34,199, were derived, in part, from endowments belonging to the Abbey of Holyrood, founded by David I., in 1236, with which this school was connected as early as 1500. The school came into the management of the magistrates of Edinburgh in 1566. Prior to that, a grammar school had existed in the Cannongate, under the charge of the friars of the same monastery, "past the memorie of man," as is stated in a memorial to the privy council, in 1580. In the year 1173, Perth and Stirling had their school, of which the monks of Dumfernline were directors. Authentic records introduce us to similar institutions in the towns of Aberdeen and Ayr. The schools in the county of Roxburgh were under the care of the monks of Kelso as early as 1241; those of St. Andrew, in 1233; and those of Montrose, in 1329.

The success of the school system of Scotland is to be attributed to their being erected on a permanent and conspicuous foundation, and to that particular constitution which made the situation of the teacher desirable to young men of education, for its competent salary, permanence, and social consideration. Of the three modes of providing for popular instruction,—that in which the scholars pay every thing, and the public nothing; that in which the public pay every thing by a tax on property, or by avails of permanent funds, and the scholars nothing; and that in which the burden is shared by both,—the latter was adopted in the original plan of the Scotch schools. The existence of the school was not left to chance or charity, but was permanently fixed by law on every parish. The school edifice and the residence of the teacher were to be provided for by public assessment, as much as the church, or the public road, or bridge. The salary of the teachers was so far fixed by law, that it could not sink below the means of a respectable maintenance according to the standard of living in a majority of the country parishes.

Dr. Chalmers, in his valuable "*Considerations on the System of Parochial Schools in Scotland*," thus notices some of the peculiarities of the system:

> "The universality of the habit of education in our Lowland parishes, is certainly a very striking fact; nor do we think that the mere lowness of the price forms the whole explanation of it. There is more than may appear at first sight, in the very circumstance of a marked and separate edifice, standing visibly out to the eye of the people, with its familiar and oft-repeated designation. There is also much in the constant residence of a teacher, moving through the people of his locality, and of recognized office and distinction amongst them. And perhaps there is most of all in the tie which binds the locality itself to the parochial seminary, that has long stood as the place of repair, for the successive young belonging to the parish; for it is thus that one family borrows its practice from another—and the example spreads from house to house, till it embraces the whole of the assigned neighborhood—and the act of sending their children to the school, passes at length into one of the tacit, but well-understood proprieties of the vicinage—and new families just fall, as if by infection, into the habit of the old ones—so as, in fact, to give a kind of firm, mechanical certainty to the operation of a habit, from which it were violence and singularity to depart, and in virtue of which, education has acquired a universality in Scotland, which is unknown in the other countries of the world."

The best minds of Scotland are at this time directed to a re-construction of the system of parochial schools, or to such an extension of its benefits, as will reach at once, the wants of the large towns, and of the sparsely populated parishes. Among the plans set forth, we have seen nothing more complete than the following, which is signed by some of the most distinguished names in Scotland.

> "The subscribers of this document, believing that the state of Scotland and the general feeling of its inhabitants justify and demand the legislative establishment of a comprehensive plan of national education, have determined that an effort shall be made to unite the friends of this great cause on principles at once so general and so definite as to form a basis for practical legislation; and

with this view, they adopt the following resolutions, and recommend them to the consideration of the country:—

1. That while it might be difficult to describe, with a near approach to statistical precision, the exact condition of Scotland at this moment in regard to education, there can be no doubt that, as a people, we have greatly sunk from our former elevated position among educated nations, and that a large proportion of our youth are left without education, to grow up in an ignorance miserable to themselves and dangerous to society; that this state of matters is the more melancholy, as this educational destitution is found chiefly among the masses of our crowded cities, in our manufacturing and mining districts, and in the Highlands and Islands of Scotland, where the people are not likely spontaneously to provide instruction for themselves; that the quality of education, even where it does exist, is often as defective as its quantity; and that this is a state of things requiring an immediate remedy.

2. That the subscribers hold it to be of vital and primary importance that sound religious instruction be communicated to all the youth of the land by teachers duly qualified; and they express this conviction in the full belief that there will never be any enlargement of education in Scotland, on a popular and national basis, which will not carry with it an extended distribution of religious instruction; while, from the strong religious views entertained by the great mass of the people of this country, and the interest which they take in the matter of education, the subscribers can see in the increase of knowledge only an enlargement of the desire and of the capacity to communicate a full religious education to the generation whose parents have participated in this advantage.

3. That the parish schools of Scotland are quite inadequate to the educational wants of the country, and are defective and objectionable in consequence of the smallness of the class invested with the patronage, the limited portion of the community from which the teachers are selected, the general inadequacy of their remuneration, and the system of management applicable to the schools, inferring as it does the exclusive control of church courts; that a general system of national education, on a sound and popular basis, and capable of communicating instruction to all classes of the community, is urgently called for; and that provision should be made to include in any such scheme, not only all the parish schools, but also all existing schools, wherever they are required by the necessities of the population, whose supporters may be desirous to avail themselves of its advantages.

4. That the teachers appointed under the system contemplated by the subscribers should not be required by law to subscribe any religious test; that Normal Schools for the training of teachers should be established; that, under a general arrangement for the examination of the qualifications of schoolmasters, the possession of a license of certificate of qualification should be necessary to entitle a teacher to become a candidate for any school under the national system; and that provision should be made for the adequate remuneration of all teachers who may be so appointed.

5. That the duty and responsibility of communicating religious instruction to children have, in the opinion of the subscribers, been committed by God to their parents, and through them to such teachers as they may choose to intrust with that duty; that in the numerous schools throughout Scotland, which have been founded and supported by private contribution, the religious element has always held a prominent place; and that, were the power of selecting the masters, fixing the branches to be taught, and managing the schools, at present vested by law in the Heritors of Scotland and the Presbyteries of the Established Church, to be transferred to the heads of families under a national system of education, the subscribers would regard such an arrangement as affording not only a basis of union for the great mass of the people of this country, but a far better security than any that at present exists both for a good secular and a good Christian education.

6. That in regard to a legislative measure, the subscribers are of opinion, with the late lamented Dr. Chalmers, that 'there is no other method of extrication,' from the difficulties with which the question of education in connection with religion is encompassed in this country, than the plan suggested by him as the only practicable one,—namely, 'That in any public measure for helping on the education of the people, government [should] abstain from introducing the element of religion at all into their part of the scheme, and this, not because

they held the matter to be insignificant—the contrary might be strongly expressed in the preamble of their act—but on the ground that, in the present divided state of the Christian world, they would take no cognizance of, just because they would attempt no control over, the religion of applicants for aid—leaving this matter entire to the parties who had to do with the erection and management of the schools which they had been called upon to assist. A grant by the State upon this footing might be regarded as being appropriately and exclusively the expression of their value for a good secular education.'

7. That in order to secure the confidence of the people of Scotland generally in a national system of education, as well as to secure its efficiency, the following should be its main features:—1st, That Local Boards should be established, the members to be appointed by popular election, on the principle of giving the franchise to all male heads of families being householders; and with these Boards should lie the selection of masters, the general management of the schools, and the right, without undue interference with the master, to direct the branches of education to be taught. 2d, That there should be a general superintending authority, so constituted as to secure the public confidence, and to be responsible to the country through Parliament, which, without superseding the Local Boards, should see that their duties are not neglected—prevent abuses from being perpetrated through carelessness or design—check extravagant expenditure—protect the interests of all parties—collect and preserve the general statistics of education—and diffuse throughout the country, by communication with the local boards, such knowledge on the subject of education, and such enlightened views, as their authoritative position, and their command of aid from the highest intellects in the country, may enable them to communicate.

Were such a system adopted, the subscribers are of opinion that it would be quite unnecessary either for the legislature or any central authority to dictate or control the education to be imparted in the National Schools, or to prescribe any subject to be taught, or book to be used; and should a measure founded on these suggestions become law, not only would the subscribers feel it to be their duty, but they confidently believe the ministers and religious communities in the various localities would see it to be theirs, to use all their influence in promoting such arrangements as, in the working of the plan, would effectually secure a sound religious education to the children attending the schools."

In September, 1847, on the invitation of an educational association of Glasgow, a large meeting of teachers from various parts of Scotland was convened in the High School of Edinburgh, and "the Educational Institute of Scotland" was formed. The following is the preamble of the constitution:

"As the office of a public teacher is one of great responsibility, and of much importance to the welfare of the community; as it requires for its right discharge, a considerable amount of professional acquirements and skill; and as there is no organized body in Scotland, whose duty it is to ascertain and certify the qualifications of those intending to enter upon this office, and whose attestation shall be a sufficient recommendation to the individual, and guarantee to his employers; it is expedient that the teachers of Scotland, agreeably to the practice of other liberal professions, should unite for the purpose of supplying this defect in the educational arrangements of the country, and thereby of increasing their efficiency, improving their condition, and raising the standard of education in general."

Among the modes of advancing the objects of the Institute, are specified "the dissemination of a knowledge of the theory and practice of education by means of public lectures, and the institution of libraries."

Since the foregoing account of the parochial school system was written, the author has availed himself of a brief visit to that country to gather additional information respecting the means and state of education generally in Scotland. The population, in 1851, was 2,870,784, of which number, one-sixth, or about 480,000 children between the ages of four and sixteen years, should be at school a portion of the year. From the best data he could consult, there were not much more than half that number at school in the year 1852; and of those who attended school, less than one half were to be found in the parochial schools. The following is a brief summary of the different classes of schools:

I. *Parochial Schools.*—The law, since 1696, provides for one school in each of the 1,049 parishes, which is not incorporated as a Royal Burgh, by authorizing the heritors or proprietors of land to the value of £100, with the minister, to elect, and, in default of such election for four months, the county commissioners to elect a schoolmaster. The person thus elected, after obtaining from the presbytery within which the parish is situated, a certificate of his being qualified, and signing the confession of faith and formula of the Church of Scotland, is entitled to an annual salary of not less than £25, a commodious house for a school, a dwelling house of at least two apartments and a kitchen, an inclosed garden of at least one acre, or its equivalent in money, and such school fees from the parents as shall be fixed by the heritors and minister. The teacher must comply with the regulations of the presbytery, which is represented practically by the minister of the parish. The parochial school is not strictly a primary school, but in many parishes embraces instruction which belongs to the academy or grammar school, the teacher being not unfrequently a graduate of one of the universities, and many of the scholars being fitted there for the university. Neither is it a free school. The sum (£30,000) realized from school fees, in 1851, exceeded the amount raised by tax on the heritors, exclusive of the accommodation of the school-house, and the master's dwelling and garden. The whole number attending these schools in 1852 was about 75,000.

II. *Royal Burgh Schools.*—These exist in parishes included within the limits of towns incorporated by royal charter, and which are exempt from the operation of the parochial system. They are generally grammar schools, and are established by the municipal council, and supported partly by endowment or municipal grant, but principally by school fees. The whole number of Burgh Schools does not exceed 90, with about 5,500 pupils.

III. *Sessional Schools.*—These are confined to the populous parishes, and are established and supported by the Kirk session, in addition to the parochial school. In 1851, there were 104 Sessional schools, with 11,892 scholars.

IV. *Assembly Schools.*—Since 1824, the General Assembly has maintained, out of a system of church collections, schools in destitute districts, principally in the Highlands and Islands. In 1851, there were 118 schools in these districts, and 44 in other parts of Scotland, maintained by the Assembly, besides 14 female schools, with an attendance, in all, of over 14,000 pupils. Besides these schools, the Assembly maintains two normal schools, one at Edinburgh, and one at Glasgow, erected at an expense of over £25,000, ($125,000) in which 137 teachers were in training.

V. *Society Schools.*—To aid certain localities, not reached by the parochial system, societies have been formed. The earliest of these, was the "*Society for Propagating Christian Knowledge*," commenced in 1701, and having now a permanent fund of over £100,000, the annual income of which supports or aids about 230 schools. The *Gaelic School Society* in Edinburgh, and an auxilliary society in Glasgow, maintain about 80 schools for poor children of Highland parentage.

VI. *Adventure or Private Schools.*—In all large towns, schools are established by private teachers at their own risks, and dependent on the fees or tuition of the scholars. They originate in the real or alleged demand of additional accommodations to those provided by law, or by various religious communions, or for a better or at least a different kind of instruction.

VII. *Orphan Houses and other Endowed Schools.*—Besides the richly endowed hospitals and asylums for orphan children in Edinburgh and other cities of Scotland, there are other large endowments for the permanent support of ordinary elementary and grammar schools. These endowments yield an income of over £50,000, and support over 100 independent schools,* besides augmenting† the salaries of a still larger number of teachers.

VIII. *Schools in connection with the Free Church.*—The disruption of the Church of Scotland, and the separate organization of the Free Church, has led to prodigious efforts on the part of the latter to establish a system of schools in connection with the churches in its communion. The system embraces a college, with special reference to theological education, two normal schools for the training of teachers, a grammar school in every large town, an elementary school in connection with every church, and subordinate schools and evening classes in large congregations, and missionary schools in destitute localities. The expense is borne by a general education fund, made up of annual collections, and applicable to building purposes, and a schoolmasters' sustentation fund, in aid of teachers' salaries. The results of this movement are not fully developed—but it has absorbed into the connection of the Free Church many adventure or private schools, and thus placed them under better supervision, and on a more certain foundation; and, at the same time, while it has multiplied schools in destitute districts, it has weakened the efficiency of the parochial and assembly schools by establishing competing schools in the same neighborhood. In 1851, the schools in connection with the Free Church and aided by its fund were as follows:—

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* Among these may be mentioned Milne's Free School of Fochabers. The founder of this school was Alexander Milne, who was born in Fochabers, but amassed an estate of £100,000 in New Orleans, which he bequeathed by will to found a Free School in his native place, for the benefit of the parishes of Bellie and Ordifish.

† James Dick, born at Forres, at his death, bequeathed an estate of over £118,788, the income of which is applied to the augmentation of the salaries of parochial schoolmasters in the counties of Aberdeen, Banff, and Moray.

424 Congregational schools—schools connected with particular congregations, and receiving aid from the Schoolmasters' Sustentation fund of the Church.
174 Side or district schools.
18 Municipal schools—planted in destitute localities.
5 Grammar schools.
2 Normal schools.

618 Schools, with 689 teachers, and 67,956 pupils, toward which the Educational Committee of the Church contributed £14,000, or about $85,000, in the year 1851. The sum contributed in school fees and local subscriptions to these schools exceeds £15,000, or $70,000.

To the pupils attending the above schools, the committee add 15,000 children attending evening schools, making 78,887 scholars under the general supervision and influence of the Free Church in 1851.

IX. *Schools in connection with the Scotch Episcopal Church, the United Presbyterian Churches, and the Roman Catholic Church.*—The disruption of the Free from the Established Church of Scotland, has led to efforts on the part of the different religious communions to establish separate denominational schools, and has awakened public attention to the religious tests and other features of the parochial system which are inconsistent with the claims of different denominations to an equality of civil privileges. The statistics of these denominational schools in 1852 were as follows:—

United Presbyterian	Church	has	54	schools,	with	5,009	scholars.
Scotch Episcopal	"	"	68	"	"	5,900	"
Roman Catholic	"	"	40	"	"	5,000	"
Other denominations		have	15	"	"	1,000	"

In addition to the educational bequests mentioned in the Note on the foregoing page, the following may be cited:—

George Heriot, celebrated by Sir Walter Scott as the "*Jingling Geordie*" of James VI., was borne in 1568. He succeeded to his father's business as a goldsmith, in one of the booths then and for long afterwards attached to St. Giles' Church.

In 1597, he was appointed goldsmith to Ann of Denmark, the Queen Consort, and in 1601, jeweler to the King. The Queen was very fond of jewelry for her own use, profuse in presents of it to others, and very changeful in her taste for particular articles. In all these respects she was naturally followed by the court circles of the time.

On the removal of the court to London, Heriot, who accompanied it, found a greatly enlarged field for his business, as well as more wealthy customers. He was also a money lender, as it was then usual for men in his business to be, and before his death had amassed a considerable fortune.

Soon after his death his money, with the exception of some legacies, was invested, as he had previously wished, in the purchase of land in the immediate vicinity of the city of Edinburgh. The subsequent value of the property, as the site mainly of the new town of Edinburgh, countenanced a greatly exaggerated estimate of the original bequest, which was somewhat less than 24,000*l.*, though the annual income is now not less than 16,500*l.*

Nothing was at first contemplated, or till 1846 thought of, beyond the hospital, which bears the name of "*Heriot's*," and which was the first of the kind in Scotland. The model in the founder's mind was the Bluecoat School in London.

Instead of extending the hospital itself, as had been contemplated, an Act of Parliament was obtained to build and maintain out-schools on the Heriot foundation. These were not to be of the hospital kind, but ordinary day-schools, for the class of children that usually attend the Sessional and other schools, provided in large towns for the children of the laboring classes. The children are neither lodged, fed, nor clothed, but receive their education *gratis on condition of regularity of attendance.*

The sites have been selected in the most densely-peopled quarters of the town. Twelve have now been erected; eight for boys and girls, and four for infants.

ANDREW BELL, whose name is well known as opposed to that of Lancaster in the controversy regarding the merit of originating the monitorial system, left his fortune, with the exception of special legacies, in two large bequests, for the purpose of carrying out those educational views which he had gradually been led to consider as of the utmost importance to the whole human race.

One deed, dated May, 1830, conveyed in trust to the then provost of St. Andrew's, the two ministers of the town church, to be followed by their successors, and to Professor Alexander, to be followed by the Sheriff Depute of Fife, and his successors in office, 120,000*l.*, to be employed in the erection and maintenance of schools on the Madras, or monitorial system. Of this sum 60,000*l.* was allotted to St. Andrew's, 10,000*l.* to Edinburgh, 10,000*l.* to Glasgow, 10,000*l.* to Leith, 10,000*l.* to Aberdeen, 10,000*l.* to Inverness, and 10,000*l.* to a Naval school in London. As an equivalent to 10,000*l.*, the estate of Egmor, valued at 400*l.* a year, was left to Cupar of Fife for a similar purpose.

Another deed conveyed the residue of his estate, with special and general directions, to other trustees, of whom Lord Leven and Mr. Cook, W. S., are now the acting parties. This yielded at the time about 25,000*l.*, which has been considerably increased by accumulations from interest.

XII. SUBJECTS AND METHODS OF EARLY EDUCATION.*

BY JAMES CURRIE, A. M.

Principal of the Church of Scotland Training College, Edinburgh.

I. INTRODUCTION.—GENERAL CHARACTER OF THE INSTRUCTION.

1. Physical exercise for the healthy growth and relaxation of the body; exercises of observation, conception, and imagination, for the mind; and moral and religious lessons for the cultivation of the heart, are the principal engagements of infancy, and, therefore, of the infant school. Under physical exercise we include the right regulation of the physical circumstances in which the child receives his instruction, which, though he is outwardly passive under them, very greatly influence the tone of his mind and feelings; physical exercises, strictly so called, requiring positive bodily exertion, such as he is subjected to in the school-room; the recreation of the play-ground, where, in full apparent freedom, he is yet under superintendence; and, lastly, singing, which in one aspect of it is one of the keenest of all the physical incitements to the general work of the school. Exercises of observation and conception are given by means of things or objects such as the eye can see, the hand handle, and the ear hear; their appearance to the eye in color, form, and size; to the touch in weight, hardness, and other qualities; to the ear in sound. As a distinct exercise of observation by this last sense, is to be mentioned the combination of musical sounds by singing. Exercises of imagination are found in the elementary geographical lesson, in which the pupil is required to group natural things, such as he has already observed, variously as to place; and in reading or relating stories of real or imaginary life. Moral and religious instruction comprises doctrines or points for belief in morality and religion; feelings to be cherished, and actions to be practiced. This kind of instruction may for the most part be best given in the form of incidental reflections throughout the daily work, and exercises of devotion.

2. The instruction of the infant school is carried on through the medium of familiar conversation between the teacher and his pupils.

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* From "*Principles and Practice of Early and Infant School Education.*" Edinburgh Thomas Constable & Co.

They can not read when they begin their course; yet they have powers which are eager for activity. The most advanced of them, though they may be able to read very easy narrative, have not that facility that enables them to extract information from what they read; and, even if by the teacher's help they can turn this to account, they ought to know, and they are able to know, much more than this source can supply them with. It is most unnatural to make their reading-power the measure of their intellectual activity. It is by conversation upon actual objects and feelings that the parent first calls forth the glimmering intelligence of the child; so it is by conversation, or, to call it by its technical name, oral instruction, that the teacher is to continue the process which the parent has begun. By this method alone is it possible to give the child a stimulus to attention; for it interposes nothing between the child and the living voice of his instructor to prevent the full play of that mutual sympathy which is the very breath of the school life. By this method alone is it possible to give an impulse to his observation, imagination, curiosity; for it submits interesting things to his inspection, while it humors his volatility by turning aside to notice any thing that attracts his own notice by the way. And by this method alone is it possible to engage the child in full activity without restraining his freedom; the teacher presents to him things of which he already knows something, and, speaking to him as a friend and companion rather than as a preceptor, easily draws from him the knowledge he is so willing to show.

3. There is another aspect of this oral instruction not less important; it is our great means for giving the child the use of his mother-tongue. When the time comes for the parent to initiate the child in this, she does not make "set" lessons on language; she speaks to him of things and feelings in which he will be interested, knowing that in learning of these he is learning to speak.* The teacher must proceed in the same way. Language is nothing apart from ideas; words must be taught to the infant in connection with things. This aspect of oral instruction is frequently forgotten in the infant school; otherwise, it would not be thrust into the subordinate place it is often found to occupy. In oral instruction, whatever subjects it deals with, the teacher should remember that he is training the child to language. He must engage each one, therefore, in conversation; he must vary the subjects of conversation, as each subject has a vocabulary particular to itself; he must watch attentively to secure a gradual increase of power over words, content at first, perhaps, with their utterance of single words, but looking, by and by, for phrases, and then easy sen-

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* See Girard, chap. i.

tences. Nor must he be wearied with repetitions, as the children are just beginning their exercises in language, and require long and varied practice to learn its endless variety of forms. Whilst oral instruction is the rule in the infant school, it is pre-eminently the want of the youngest infants. The teacher may observe in the elder pupils some diminution of interest in the oral lessons; this is one of the symptoms that the time has come for advancing them from the infant school. They have now got a practical command over speech which serves them for all ordinary purposes; and they not only require, but feel a desire for, the new field of exercise which book-instruction gives. But the younger children have no such command of language; and what they want most is such a knowledge of the names of common things and actions as shall enable them to characterize these when they see them, and to hold intercourse with their fellows regarding them. Hence their acquisition of language goes on with great rapidity. The younger the children, therefore, the more should they be occupied by oral instruction.

4. What are we to say of book-learning, which in point of fact occupies a place in all infant schools? The power to read with intelligence is the greatest benefit which school-education bestows upon us; for this enables us to educate ourselves in after-life. Not unnaturally, therefore, the reading-lesson occupies the principal place in the common school. It does not follow from this, however, that it should hold, as it is commonly made to hold, the principal place in the infant school; for the proper study of it requires certain powers which the child in the first period of his education does not possess. It is self-evident that reading is an effort for the child, whilst conversation is not. Even to read mechanically is so. It is impossible for him to fix his eye upon a page, and to thread his way from word to word, and from line to line, in their close succession, without feeling a strain upon the nerves of sight, and through them upon the brain, which has only to be prolonged to do him serious injury. To read with intelligence is a double or complex effort. It includes all the effort necessary for mechanical reading, and in addition the effort which is necessary to keep the mind moving at the same rate as the eye. The mechanical motion tends from the first to outstrip the mental; and the effort to keep them together is the most painful to which the infant can be subjected. The brain is under a twofold strain; that from without through the nerves of sight, and that from within proceeding from the reflex action of the mind upon it. Well has it been said that "it is not so much the actual process of learning to read as the consequences of being able to read during early years

that are to be guarded against." From physical considerations, then —which dictate the fundamental law in infant education—we conclude that is imprudent to have the child's attention fixed for any considerable portion of a day on a book.[*]

5. Systematic reading from books should be delayed till the child becomes physically capable of a little conscious effort, which it does about four and a half or five years of age; that is to say, it may be carried on during the last year and a half or two years of his infant-school attendance. There would be no harm in delaying it even till the very end of this period; his progress would be all the more rapid when he did begin. But on this point the teacher may defer to the desires of parents, provided he do not urge forward the child too much with the reading-task, by keeping him at his book over an immoderate proportion of his daily time. During the first half of his infant-school attendance, the child should be prepared for learning to read rather than engaged in reading. His oral instruction will put him in possession of a large number of words with their applications; without which it is altogether a solecism to engage him with written language. It can also make him acquainted with the forms and sounds of all the most familiar words of the language, and with the elements of words, in connection with the *things* which it speaks to him about, not only without tasking him, but by way of amusement.

With these limitations we may consent to reckon the reading-lesson as one of the occupations of the infant school.

6. The following table presents at one view the different parts of the school-work:[†]—

PHYSICAL, ...	1. Healthy condition of the school-room. 2. Physical exercises in school. 3. Recreation in play-ground. 4. Singing.

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[*] The limits to the use of books in infancy are nowhere better defined than in the work on *Home Education*," above referred to, chap. iv., which should be carefully read by the student. "Not a syllable of book learning," says the author, "need have been acquired, and scarcely a task learned, and yet the mind of a child in its fifth year, may be not merely in a state of the happiest moral activity, but may be intellectually alive, and actually possessed too of various information concerning the visible universe; and he may have made acquaintance with whatever presents itself under a pleasurable aspect, (and assuredly nothing but what is agreeable should be presented to the infant mind.") Speaking of the labor of the child in reading with intelligence, he says, "There is a particular jar [between the motion of the eye and that of the mind,] a want of synchronous movement, and a sense of distress, and a strain which quickly exhaust the power of attention; or if persisted in, impair the brain. . . . It is certain that the ruddy vigor of high health will almost always be found in inverse proportion to the hours in the day, during which a child has a book before his eyes."

[†] On the general character of early instruction, Marcel has an excellent chapter in his work on "*Language*." See book iv. chap. i.

INTELLECTUAL, ...
1. Objects.
2. Number.
3. Color and form.
4. Sound.
5. Geography.
6. Reading and reciting to pupils.
7. Reading and spelling.

MORAL AND RELIGIOUS,
1. Doctrines and points for belief.
2. Duties.
3. Incidental instruction.
4. Devotions.

II. PHYSICAL CIRCUMSTANCES OF INSTRUCTION.

7. It is the first and constant duty of the infant-school teacher to attend to the regulation of physical influences. He has to deal with a large number of children, of tender age, of different temperaments and degrees of health, keenly susceptible of external influence on their bodily frames, and liable to suffer from even slight irregularities. A disregard of the plainest laws of health in the school-room must, in the end, affect the health of the children; in the meantime it prevents them deriving any benefit from the work in which they are engaged. For his own sake, too, the teacher must be mindful of these laws. If he is depressed in spirits, not to say enfeebled in health, the whole school suffers. One day's work in a close room may not affect him much; but no constitution can resist the effect of a continuance of this over several years. It is in the fact that such influences operate almost imperceptibly that his danger lies. Let the sanitary state of his school-room, then, be his first thought when he enters it in the morning; and let his thoughts recur to this at the end of every lesson.

8. First in order of importance is ventilation. The school must have a steady supply of fresh air throughout the day. The symptoms which indicate neglect of this are very plain. Perhaps the teacher may often be conscious of a dimness of eyesight, a giddiness of head, a general languor and drowsiness which nothing can shake off and for which he can not well account; it is probable they are largely owing to his working in impure air. Many continue even to bear headaches, sickness, or sore throat, without ever suspecting that these are owing to the same cause. If such be the effect on the teacher, is it to be supposed that the children will escape? Their countenances and the tones of their voice are some index to the state of the school. And if the teacher will scrutinize these, as he should accustom himself to do, he will be kept from error in this matter. It is not enough that the air be fresh in the morning; or that the windows be opened and closed fitfully throughout the day, just as acci-

dent may direct his attention to the subject, or that there be one stereotyped degree of ventilation throughout the year; this is a matter that requires attention from hour to hour, and from day to day, according to wind and weather. An atmosphere which is fresh in the morning very soon becomes vitiated unless it is changed, and the teacher may not be conscious of its condition; he can not do better than go outside occasionally for the sake of comparison.

9. Another important feature is the keeping up of a proper degree of temperature in the school-room. Every school should have a fire; and the teacher should regulate it throughout the day. Where there is neither fire nor stove, we need hardly wonder that the windows should be kept close to obtain warmth. Both extremes of temperature must be avoided. If the temperature be kept habitually too high, the children will become nervously sensitive of cold. At the same time the air may be fresh and yet injuriously cold. Particularly are drafts to be avoided. As many schools are constructed, it is hardly possible to avoid these. A class should not stand immediately under an open window or behind a door.

10. The management of light is not so much attended to as it ought to be in schools. A dull, dingy room, in which the eye has to strain itself to discern objects, must depress the elasticity of children. On the other hand, a body of bright light, streaming into the faces of a class, can not but produce restlessness and inattention. If the windows are not well placed for the distribution of light, the teacher may, perhaps, modify their effects by regulating the state of the blinds. An infant school should be a light, cheerful place.* A stone-color is most suitable for the walls.

11. Children in the infant school are not capable of much tension, either mental or bodily. A great deal of inattention is often attributed to willful trifling, which would be more justly traced to the teacher's disregard of the physical capacity of the children.

The hours of school attendance should not be long; never exceeding four daily; distributed thus, two hours in the forenoon, and two in the afternoon, with an hour's interval; or better, into three sittings of an hour and twenty minutes each with two intervals of three quarters each, if the circumstances of the school admit of it. Whatever children can do in school, they will accomplish within these hours; to prolong their attendance to five or six hours, instead of aiding their progress, will only injure their health. Parents are often found to desire this longer attendance; but the teacher must be guided neither by their ignorance nor their selfishness, but by his own consciousness of what is right in this matter; for it is he alone that would have to bear the responsibility in the event of any child being injured.

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* The management of light and ventilation is referred to in some of the inspector's reports, in the "*Minutes of Council*," *e. g.*, Rev. M. Mitchell's, 1853-54, and 1855-56, and Rev. Mr. Bellair's, 1855-56.

12. Every morning and afternoon should be occupied by various lessons. A lesson should not average in duration more than a quarter of an hour, and on no account exceed twenty minutes. It is hard enough to sustain the attention even for this period, and no child will be able to retain more than we can tell him within it. The teacher should subdivide his lesson rather than trespass beyond this limit. Lessons of different kinds, *i. e.*, occupying different senses, should follow each other; this is a great relief. It is absurd to speak of these frequent changes as causing loss of time.

13. Not more than three-fourths of each morning and afternoon period should be devoted to instruction which involves mental occupation. It is necessary to have short intervals between the lessons for physical relaxation; which is given either by a general change of position in the classes throughout the school, accompanied with marching, or by special bodily movements. Further, it may sometimes be necessary during the lesson to recall the wandering thoughts of one or of all by such movements for a few seconds; the teacher may easily read in the countenances of the children when such a stimulus will be beneficial. Too much either of sitting or of standing is objectionable; they must alternate. Variety in every species of activity is the rule of the infant school.

14. There is an endless choice in the selection of physical exercises; body, legs, arms, and fingers, may all be called into requisition. Bending of the body, a sudden passing from a sitting to a standing posture and *vice versa*, easy gymnastic movements of the arms, beating time with the feet, action amongst the different fingers, and imitation of the trades, are the most common. The secret of success in these is alertness in calling for them and in varying them rapidly and decidedly. They should be performed by the children, partly at word of command, but chiefly in silence, by imitation, with eyes fixed on the example of the teacher.* Free and confident motion is indispensable in the teacher whilst giving them; they will fail unless the children see and feel the influence of this. Smartness in giving these exercises is not the least of the accomplishments of the infant-school

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* "And pupil teachers, if any, be present." It may be observed that these exercises are better done when *all* the assistants in the room take part in them. The children seem to expect that all present should join with them. This is the effect of sympathy. For the various physical exercises that may be given, either in school or in play-ground, see "*Exercises for the Improvement of the Senses,*" (L. U. K.,) Part III.

teacher; it turns into an aid to discipline that disinclination to remain still which would otherwise disturb him. The only limitation to them is that they should not be ungraceful in themselves, or unduly noisy, or tend to produce any kind of discomfort in the class-room. Those are particularly suitable which from the rhythm of their motion admit of being accompanied by singing; of which marching is the most prominent.

15. We shall do no more than simply notice here the exercises of the play-ground, as the provisions for these will require us to speak of them more minutely afterwards. The proportion of play to work must in the case of infants be very large. The usual daily hour of interval is not enough for the purposes of training; but circumstances often make it impracticable to give more. As already indicated, the work should be twice broken by recreation; a third opportunity may be had before the children enter school in the morning. They should return home immediately, however, after the last school hour. As the play-hour serves both to give recreation to the children and to afford room for the exhibition of their dispositions in actions toward each other, it should be given under superintendence.* Such a watchfulness would serve no good purpose with advanced pupils, but the reverse; young children, however, do not feel it to be any restraint on them.

16. Finally, singing is a physical exercise of wonderful power in relieving the more serious work of the school. All must observe its calming influence after exertion, and its cheering preparative influence on exertion yet to be undergone. It is like the ventilation of the mind; giving an outlet for the oppressed and pent-up feelings of the child, the hearty utterance of which is at all times refreshing. The younger children are, the more and the more frequent the necessity for the relaxation thus afforded; there can be no successful management of the infant school without it. We shall afterwards have to notice its value as a branch of instruction; what we insist on at present is its value as an instrument in a skillful hand for keeping alive the tone and activity of the school.

III. INTELLECTUAL INSTRUCTION.

1. *The Object-Lesson.*

17. We are not to confound, as is very often done, the object-lesson of the infant school with the lesson on "common things," as that phrase is now generally understood. The latter, strictly speak-

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* Hence the name of "uncovered school-room," which Mr. Stow has applied to the play-ground.

ing, is not designed for the infant school at all; the purpose of it is to give a certain amount of practical information about the things and processes of every-day life to children sufficiently advanced to turn it to account. The object-lesson of the infant school has quite a different purpose. Its predominant aspect is the mental exercise it gives; it is meant to awaken the intelligence, and to cultivate its different phases of observation, conception, and taste, without which little satisfactory progress can be made in their future education. It is a disciplining, not a utilitarian, process; the information it gives is a means, not an end.

18. The range of this department of instruction is exceedingly comprehensive. It draws its materials from all the branches of knowledge dealing with things which can interest the child or exercise his mind. Thus, it is Natural History for children; for it directs their attention to animals of all classes, domestic and others, their qualities, habits, and uses—to trees, and plants, and flowers—to the metals, and other minerals, which, from their properties, are in constant use. It is Physical Science for children; for it leads them to observe the phenomena of the heavens, sun, moon, and stars, the seasons, with the light and heat which mark the changes of the weather, and the properties of the bodies which form the mass of matter around us. It is Domestic Economy for children; for it exhibits to them the things and processes daily used in their homes, and the way to use them rightly. It is Industrial and Social Economy for children; for it describes the various trades, processes in different walks of art, and the arrangements as to the division of labor which society has sanctioned for carrying these on in harmony and mutual dependence. It is Physiology for children; for it tells them of their own bodies, and the uses of the various members for physical and mental ends, with the way to use them best and to avoid their abuse. It is the "science of common things" for children; for it disregards nothing which can come under their notice in their intercourse with their fellows or their superiors. And, finally, as we shall afterwards see more distinctly, it is Geography for children; since it has favorite subjects of illustration in mountain and river, forest, plain, and desert, the different climates of the earth, with their productions and the habits of their peoples, the populous city, and the scattered wigwams of the savage.

19. All the things fit to be treated of in the object-lesson may be said to be "familiar things;" at the same time, the phrase must not be too narrowly interpreted. We can not consent to confine our instruction to things which the child has the opportunity of actually seeing. By familiar things we are to understand all those things of

which he can exercise his mind in the way which is familiar to it. For example, amongst animals, the lion, the camel, the elephant, and the reindeer afford scope for reasoning of as familiar a kind as the horse, the sheep, or the dog. In the vegetable world, similar remarks may be made on the tea-plant, the sugar-cane, and the cotton-plant, relatively to the potato, the turnip, and flax—upon rice and maize relatively to barley and wheat—on the palm-tree and the cedar relatively to the fir and the oak. All the child's observation of things at home, of the materials for food, clothing, building, or industry, prepares him for observing the corresponding things in other lands, and is in turn greatly enlightened by this extended observation. Of course, things around him claim his first regard; that is not, however, because the reasoning about them is easier, but because the observation of them is more palpable and definite, and it is observation that is to be first exercised. As soon as he can reason at all, his imagination must be sent abroad. There is no force in the argument sometimes employed that his attention should be confined solely or chiefly to things about him on the ground that he may not be long at school, or that his future occupation may throw him into the midst of these. The mental exercise of the infant school must be held to be independent of such considerations of time, place, or professional prospects.

20. The features common to all infant-school teaching will be noticed further on; so that, with regard to the method of the object-lesson, it need be only here stated that, as it has in view the cultivation of the conception and the higher faculty of relation, so both of these faculties must be exercised in their proper time and degree. The former can not be furnished and stimulated, unless the object be actually subjected to the observation of the class, and that not to one sense only, but to all that are available. It is not enough, for instance, that in a lesson on "glass," the teacher should simply hold it up before the class, and on the strength of his own observation proceed to state its properties. It is *their* sight, and touch, and hearing, that are to be exercised; so that he should first show it, then put it into the hands of the children to feel it, and then ring it on the table. This is often neglected, just because it seems needless; thus it may seem enough if the teacher squeeze a sponge to show that it is soft and elastic, or if he handle lead to show that it is heavy. But this is only an exercise of sight to the class; tactual as well as ocular inspection by some, if not by all, must be allowed. How far the reasoning of a child may be carried, and in what way it is to be exercised, has been indicated already.

21. One great use of the object-lesson is to cultivate the conceptive faculty in connection with language; for which purpose it should, from first to last, present much of the descriptive part of our vocabulary, dealing first with those terms that denote qualities broadly recognizable, before descending to the finer shades. The describing and the naming the qualities of things is thus quite a legitimate resource in these lessons; still, as bodies possess the same qualities frequently in common, there is great danger of the object-lesson falling into a barren monotony of plan. To remedy this, the teacher will observe, (1.) that the universal qualities of bodies, or those which are nearly so, such as *useful*, *opaque*, *inanimate*, need be very seldom mentioned; (2.) that when qualities are given, there should be a *real* exercise of observation given with the name (§ 20;) and, (3.) that the mentioning of these qualities should not, in the general case, constitute the whole of the lesson, but that other facts should be communicated, which are interesting to be known, and which exercise the imagination, the sense of beauty, and the moral feelings. This will prevent the verbal aspect of the lesson from obtaining too great predominance over the real.

22. A very common, though little noticed, practical error in the giving of object-lessons, is the neglect to distinguish the different stages in the advancement of the children to whom they are given. An infant of four years is a very different being, intellectually, from one of six or seven; and can only to a very small extent follow a lesson addressed to him. Even in dealing with things we shall not secure the child's attention, unless we select things which interest him, and unless we address him in a suitable way. Perhaps we may distinguish three stages of the object-lesson. In the first, the pupil is required to distinguish objects by their names, to notice their parts, their color, and, a little later, their simpler properties, such as form and size; in the second, the lesson should deal chiefly with qualities and uses of things; and in the third, with a more formal statement of the various relations in which things stand to each other, resemblance, causality, &c. These three stages may correspond approximately to the first year of attendance at the school, the second year, and the third year or part of year.

23. The following list exhibits a variety of subjects suitable for the first stage:—

1.—*Natural History.*

Sheep.
Cat.
Dog.
Horse.
Bear.
Wolf.
Fox.
Hen.
Bee.
Ant.
Spider.
Butterfly.
A Tree.
Rose.
Lily.
Daisy.

Cow.
Donkey.
Goat.
Rabbit.
Hare.
Pig.
Deer.
Mouse.
Lion.
Elephant.
Camel.

Goose.
Duck.
Swan.
Crow.
Sparrow.
Swallow.
Robin.
Pigeon.
Parrot.
Pheasant.
Common Fly.

Herring.
Haddock.
Crab.
Whale.
Worm.
Adder.
Snake.
Mussel.
Whelk.
Oyster.
Snail.

Dandelion.
Potato.
Turnip.
Carrot.
Cabbage.
Grass.
Leaves.
Apple.
Pear.
Cherry.
Berries.

2.—*Domestic Economy.*

Different kinds of Houses.
“ parts of a House.
“ kinds of Roofs.
Things used in Kitchen.
“ “ Parlor.
“ “ Bedroom.
Things for sitting on.
“ lying on.
“ eating with.
“ drinking with.
Breakfast-Table.
Dinner-Table
Tea-Table.

Articles for Breakfast and Tea.
“ Dinner.
Things for washing with.
Parts of our Clothes.
Vessels for holding things.
A Fire.
Utensils for Fire.
Making of Tea.
“ Coffee.
Porridge.
Bread.
Candle.
A Bed.

3.—*Physiology.*

The Body.
Arms.
Hands.
Fingers.
Legs.
Feet.
Toes.
Head.
Face.

The Eyes.
Mouth.
Nose.
Ears.
Throat.
Skin.
Bones.
Blood.
Voice.

Hearing.
Seeing.
Feeling.
Smelling.
Tasting.
Running.
Leaping.
Walking.
Hopping.

Swimming.
Standing.
Breathing.
Sleeping.
Dreaming.
Singing.
Dancing.
Drinking.
Eating

4.—*Industrial and Social Economy.*

Things for writing with.
“ sewing with.
The Cabinetmaker's Shop.
Baker's “
Grocer's “
Butcher's “
Shoemaker's “
Tailor's “
Painter's “
Fruiterer's “
Smith's “
The Farm.
Garden.
Ship.
Sailor.
Letter-Carrier.
Soldier.

The Railway.
What their parents do in a day.
“ brothers “
“ sisters “
“ themselves “
Materials for Clothing.
Leather.
Materials for Building.
“ Furniture.
Making Stockings.
The School.
Work of the School.
The Family Circle.
One's Relations.
Things of Stone.
“ Iron.
“ Tin.

5.—*Common Things.*

Cart.
Table.

Clock.
Watch.

Gas-light.
Drawers.

Nails.
Thread.

Chair.
Stool.
Coach.
Railway Carriage.
A Letter.
Money.
Picture.
Window.
Book.
Scales.
Bottle.
Blackboard.
Slate.
Ink.
Pins.
Needles.
Scissors.
Thimble.
Rope.
Pen.
Quill.
Shilling.
Egg.
Penknife.

6.—*Physical Appearances.*

Aspects of Sky.
" Sun.
" Moon.
" Stars.
" Rain.
" Snow.
" Clouds.
" Wind.

Aspects of Water.
" Vapor.
" Ice.
" Heat.
" Cold.
" Spring.
" Summer.
" Autumn.

Aspects of Winter.
" Thunder and Lightning.
" Rainbow.
" Day.
" Night.
" a Storm.
" a Calm.

Supposing an object-lesson to be given daily, the list of subjects now presented, making allowance for the geography object-lessons which are not here included, is large enough for a year's work; and it may readily be increased.

24. For the second stage or year, many of the foregoing subjects might be repeated, and information given on a larger scale; whilst a further selection of common objects should be made to exemplify the qualities of bodies and put the pupils in possession of descriptive terms. The following list is sufficient to exemplify all the more familiar qualities; it may be enlarged or varied at the teacher's discretion:—

Cork.
Leather.
India-Rubber.
Sponge.
Glass.
Iron.
Wood.
Water.
Paper.
Common Sugar.
Loaf-Sugar.
Wool.
Sealing-Wax.
Salt.
Whalebone.
Sand.
Bread.
Lead.
Copper.
Gold.
Tin.
Mercury.
Honey.
Gum Arabic.
Starch.
Glue.
Paste.
Slate.
Coal.
Soap.
Horse-hair.
Feathers.
Clay.
Oil.
Vinegar.
Chalk.
Earthenware.
Putty.
Wire.
Silk.
Barley.
Rice.
Pepper.
Ginger.
Rose.
Hawthorn.
Tea.
Coffee.
Milk.
Balloon.
Air-bubble.
Bladder.

After some practice in the observation of qualities inherent in particular objects, the idea of the quality in the abstract will gradually form itself, and the ground may be gone over again in reverse order. Thus a quality may be selected, *e. g.*, heavy, hard, smooth, brittle, elastic, tough, liquid, viscid, fibrous, pliable, fusible, porous, inflammable, or the like, and various objects which have the quality brought together, and the uses to which they are put in virtue of the quality slightly noticed.

25. In the third stage, the pupil is required to trace relations more,

particularly of resemblance and of connection by way of cause and effect. Such relations have not been altogether unnoticed in the middle series of lessons, but the teacher has greater latitude now. Most of the subjects of the second year are quite serviceable still; for there are many points connected with the form and utility of these which the pupil has not yet been able to comprehend. Bearing in mind that it is more in the tracing of incidental connections that the sense of relation is cultivated at this period than by the antithetic statements of the explicit comparison, the following list presents subjects in the latter exercise for which the pupils may be deemed quite competent:—

Dog and Cat.
Dog and Wolf.
Dog and Fox.
Newfoundland Dog and Shepherd's Dog.
Cat and Tiger.
Rabbit and Hare.
Bee and Wasp.
Snail and Whelk.
Duck and Goose.
Swallow and Sparrow.
Coverings of Birds.
Wool and Hair.
Nails and Claws.
Needle and Pin.
Pen and Pencil.
Steel-pen and Quill.
Knife and Penknife.
Cart and Wheelbarrow.
Shilling and Penny.
Cotton and Wool.
Clock and Watch.
Grate and Stove.
Snow, Hail, and Ice.
Hand and Foot.
The Teeth.
Hoof of Horse and of Camel.
Whale and Fish.
Thumb and Forefinger.
Bird and Quadruped.
Animal and Plant.
Plant and Mineral.
Tree and Shrub.
Common Shrubs.
" Flowers.
" Wild Flowers.
" Trees.
" Shells.
" Esculents.
Different states of Weather.
" kinds of Clouds.
" " Fuel.
" " Bread.
" " Soap.
" " Sugar.
" " Coal.
" " Glass.
" " Nails.
" " Stockings.
" " Lamps and Lights.
" " Gloves.
" " Locks and Keys.

26. The following are examples in outline of the different kinds of lessons suitable for the younger infants—the successive points for illustration being indicated in italics:—

I. The Sheep.

Subject of lesson familiarly introduced—animal you often see passing you on streets, a great many going together, what can it be? The *sheep*. Where going to? the *market*, to be *killed*—*poor* sheep—*flock*.explained—the *shepherd* in charge—the *dogs*.

Where did they come from? the *fields*—in the *country*—where the *grass* grows—the *green* grass—which the sheep *eat*. Did you ever see them in the field? What doing? *walking about*—*lying down*, sometimes at the *wall*, sometimes *under bush*—*eating*.

Were you ever near one? how *afraid* it is—how *big* is it? bigger than the *eat?* its color *white*, sometimes *black*. How it feels when you *touch* or *handle* it—*soft* all over, from the *wool* on its *back*. How many legs? What they are like, and its little feet? *marks* left by a flock on the street or road. Its *face*, *ears*, &c., sometimes *horns;* and with the horns they sometimes *box*—(if the season be spring, the *lambs* should be noticed.)

The sheep is very *gentle* and *timid*, and *hurts* no one—little children sometimes *throw stones* at it, which is very *wrong*—they should be *kind* to it.

II. A Bed.

Willie—was sleeping a short time ago; what made him do so? he was *tired*. Should we let him *sleep long?*

The *use* of sleep—how *every one*, their fathers and mothers, brothers, sisters, &c., need it. *What* makes us sleep? the *time* for it?

What we sleep in? a *bed*—put off our clothes, for we are to sleep *till morning*—what is in the bed? *blankets* for warmth, *sheets* to be *nice and clean*—*coverlet*, perhaps white or blue—the *mattress* thick and soft below.

We should be *thankful* to have comfortable beds to go to at night—some *have not*—*God gives* us this and all good things—what should we *do when we* go to bed? *Ask God* to take care of us through the night—and when we rise.

III. The Mouth.

Refer to previous lessons (perhaps) on face, eyes, nose, &c. What more to be seen on the face—look at your neighbors' faces—*mouth*.

Open your mouths, shut them, point to them—different things the mouth is for—*eating* when we are *hungry*, *drinking* when *thirsty*, *singing* when *merry*, *yawning* when *sleepy*, *speaking* when we have *any thing to say*, &c.

Many things in mouth—*tongue*, which is soft—move them—little children sometimes *put out their* tongues, which is *naughty*—the *teeth* for *chewing*, *e.g.*, bread, flesh, &c.—many of them *small* and *white*, and sometimes they *come out*—and for *shutting* the mouth we have *lips*.

We should take care what we *put into* our mouths—little children sometimes *hurt themselves* by putting strange things into their mouths—they should *ask* their mothers or their teacher first.

IV. The Baker's Shop.

What do children bring to school with them? their books, playthings, but also their "*piece*" (lunch)—what they bring it for? to eat—*when* do we eat? different things we eat, bread, flesh, &c.

I have a piece of (wheaten) bread in my hand—its *color? hard* or soft? Where it comes from? the *baker's shop*—What does the *baker do?* does he give it *for nothing? what does he give it for*—you often buy for yourselves and your parents.

What have *you seen* in a baker's shop? *different* things named, with their color, and form, and degree of hardness.

How should we do without the baker, who makes so many nice things?

Yesterday I saw some *crumbs* on floor, and a small piece of bread—notice how *easily broken* it is, and how *very careful* we should be with it not to waste it.

Conclude with the anecdote of the dog that went to the baker's shop every day, with the halfpenny, and brought back the roll; or with the verses on "The Crust of Bread."

V. The Cart.

Tell me all the things you met in coming to school this morning—things named till they come to *cart*—the *man* that drove it, and the *horse* or *donkey* that pulled it.

Its parts—*wheels* and *spokes*—then the *shafts* for the horse to go in—the cart itself, its *bottom*, and *sides*, and *back*. Draw or show model of cart or its parts.

What did you see *in* the cart? *coals*—get a *number of different* things named that they may have seen in carts—have *you ever* been carried in a cart? And when the cart is heavily laden it has *two horses*, and the other pulls by a *chain*.

What could we do without the cart? Little children sometimes get into their way in the street or road; which is wrong, for they may be hurt. So when we see a cart coming, we must quickly get out of its way.

VI. Rain.

What kind of day is this, children? day described, *sunny*, *clear*, *warm*, perhaps. Is it *always* so? What *other* kind of days have we? they are named till *rain* is mentioned. What was the *last* rainy day?

Where does the rain *come from?* what does it do? *wets* every thing, streets, houses, &c.

You can not *play* on rainy days—perhaps you wish there were none—but they *are needed* to make things grow, *trees* and *grass* and *flowers*, &c.—did you ever notice how fresh and green all things look *after a shower?*

If you go out on rainy day what happens to you? your clothes are wet and spoiled, perhaps—children sometimes go *out in* rain, which they should not do.

Who sends us both rain and sunshine? Verses on the Rain.

27. The following are outlines of more advanced lessons, such as might be given at the second stage; the first on a very familiar animal, in which the information is given on a larger scale than it would be to the youngest classes, the second on an object, with a special view to illustrate the qualities of it, and the third on a quality.

I. The Elephant.

The *general* size of the animal should be first noticed; its *hight* and *bulk* make it the largest of quadrupeds; compare it in hight *with a man*, and in bulk with the *largest animal* known among us, the horse.

What kind of *legs* it must have, *thick* and *strong*, like *pillars;* what it has got for *toes*. Infer whether it has *joints* in its legs or not; *necessary* to enable it to kneel for service of man. Its *head* big and heavy, with *hanging* ears; infer the character of its *neck*. With a short neck, could it drink *off the ground?* The substitute in the shape of a *trunk;* describe this; illustrate its power by an anecdote—*Mouth* and *teeth* and *tusks*—*skin* compared with that of the horse in color and covering. Show the picture of the animal.

How *it lives*—perhaps some one may infer from its structure that it is *not flesh-eating*—eats *leaves* and *twigs of trees* in his tamed state; *rice* also is given.

Countries it lives in, and is intended for.

How it *is used* after being tamed—being strong, it can *do much work*—*carries* loads, *pulls* or *pushes* carriages, &c.—used for *riding* on—easy to *tame*, *gentle*, and *knows well* what is required of it.

NOTE.—The *inferential* or *comparative* aspect may be extended or diminished to suit the class addressed. The order here followed is, (1.) structure; (2.) habits; (3.) uses. This is not always the best order to follow. Thus, in a lesson on the "camel" the habits or mode of life had better precede the structure. The rule is to begin with whatever the children know best about the subject. In the lesson before us, all that they know about it may be its general size and appearance, with the presence of the trunk or tusks

II. The Sponge.

Notice the various uses of the sponge for *domestic purposes*

Then its qualities *by inspection*. Its *color*, light yellow; *soft* to the touch; *light* in weight; easily squeezed by the hand, *i. e.*, *compressible;* springs back again after being squeezed, *i. e.*, *elastic;* full of little canals, *i. e. porous;* sucks in water, *i. e.*, *absorbent;* when torn, seen to consist of a *fibrous* substance.

[The different qualities here indicated must be clearly wrought out by the teacher, and verified by the class, before the terms are given. According to the advancement of the class, *other articles* may be named exhibiting any of the same qualities.]

How it is useful *for washing*—because of its *sucking in* the water, and throwing it out again *under pressure*, the fibers resuming their place again from their *elasticity*, and ready to suck in as before.

Tell the interesting story of "where and how it grows," and "how it is got."

III. The term "Porous."

The term is supposed to have been illustrated before in connection with some familiar substance—sponge, for instance, as above.

Mention *any thing porous?* *Sponge.* *How do we know* it is porous? what like is it? Full of holes or apertures. Can we always *see* the holes? No; they may be *very small.* How do we know it is porous, then? Any *other thing* that is porous? *Bread;* illustrate how it so. *Wood* is porous; illustrate this by wood that has been lying in water. *Loaf sugar* is porous; illustrate this by the appearance it presents when dropped into tea. On the strength of these illustrations, an easy definition of "porous" may be given: porous means "full of pores, or little pipes." Then they may be told of the porousness *of the skin.* [The microscope would be of great use in such a lesson.]

28. There is considerable danger that the teacher may confound the character of the "early" and "middle" object-lesson in his practice, and therefore a number of examples have been given of these, particularly of the "early," for analysis. There is less danger of erring in this way with the "higher" object-lesson, so that one outline may suffice:—

THE COMMON HEN		THE COMMON DUCK
	lives	
on the ground about our houses,		about ponds, in which it swims,
	has a body,	
short and nearly round,		long and flat, for resting on water,

thick and upright,	a neck,	longer and curving, to stretch under water,
short and sharp, to peck in ground,	a bill,	broad and flat, to grope in the mud,
with separate claws, fitted for walking and for scraping in the ground,	feet,	with a web, and placed far behind for swimming, so that it does not walk well,
short, and not fitted for water, either for a pond or for rain.	feathers,	longer, and constructed so as to be light, and to throw off the water.

29. As soon as the children can read print or script hand, this ability should be turned to account in the object-lesson. The heads of topics, or the names of qualities, should be written down to make them acquainted with the forms of the words as well as to aid the impressing of the lesson; and the blackboard should present at the conclusion of each lesson the outline of what has been said. The previous paragraph exhibits what might be the appearance of the notes on the board at the end of the lesson there sketched. The necessity of *sketching* on the blackboard for illustration, as it is felt in other lessons as well as in the object-lesson, will be adverted to heareafter.

30. The moral aspect of the object-lesson is not to be overlooked. There is abundant room, incidentally, for profitable reflection. This may take different forms. Thus, in lessons on objects drawn from the region of nature, as from animal life from the phenomena of the world, the beauty in form or in adaptation which we constantly meet with can not but impress us with the wisdom, power, and goodness of the Creator, and with a sense of the homage which is therefore due to Him. From various animals we learn useful practical lessons regarding personal or social habits; as order and diligence from the ant, perseverence from the spider, &c.; also, we have suggested to us our duty towards them. And from certain kinds of lessons such duties may be easily inferred as that of using temperately and thankfully our gifts, of kindness to others less favored than ourselves, of economy, &c. Some of these are exemplified in the outlines given in § 26. No general rules can be laid down either for the mode or the extent of such reflections; beyond these, that where occasion presents itself we are bound to avail ourselves of it, and that the reflections should be short and naturally suggested by the lesson.*

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* Mayo's "*Object-Lessons*" may profitably be consulted by the teacher for materials; also "*Information on Common Objects*," published by the Home and Colonial School Society

2. *Number.*

31. Number is a property of things which the child observes very early, so that he may be exercised upon it as soon as he enters the infant school. He may be subjected to a mental training of very considerable extent in connection with number; regarding which the following remarks may be made:—

(1.) As the child comes by his first notions of number through the medium of objects, so his whole training must be based on the observation of these. He does not use numbers for their own sake, but for the sake of the things to be numbered; he counts by sight, and is not able to abstract number from the things. He knows what five balls or five horses are, but he can not reason about the number five. If it be understood that it is with number as a property of bodies that the infant has to deal, and not with the science of number, it will be very clear that he must not be occupied with rules or technical operations. This preliminary course of training is termed "on number," to distinguish it from the formal study of arithmetic. The teacher will find no aid for it in the ordinary text-books on arithmetic; he must give it orally himself.

32.—(2.) The child's observation of number will carry him over a wider range of numerical operation than might be thought possible at first view. It will enable him to work practically in all the fundamental operations. The outline of the course may be conveniently indicated by the following heads:—(*a.*) Practical Numeration; (*b.*) The Adding of Numbers; (*c.*) The Substracting of Numbers; (*d.*) Multiplying of Numbers; (*e.*) Dividing of Numbers; (*f.*) Combined Operations; (*g.*) Parts or Fractions of Numbers; (*h.*) Tables of Applied Number or Standard Measures. The details to be given under each of these heads should be studied with a view, not only to the nature of the operations, but to their order.

All we ask is that the teacher shall bear in mind that it is with infants he is dealing; that, therefore, he shall not expect them to comprehend or perform any thing that is complex; and that he shall speak to them in familiar untechnical language.

Mann's "*Handbook of General Knowledge;*" "*The Observing Eye;*" "*Book of Birds, Fishes, Trees,*" &c., published by Society for Promoting Christian Knowledge; "*Exercises for the Improvement of the Senses.*" See also the list of books given in the note on § 87, some of which are available for giving materials for object-lessons. The chief practical works on infant-school training may be mentioned here once for all; they are Wilderspin's "*Infant System,*" Young's "*Infant-School Teacher's Manual,*" (Dublin;) Chambers's "*Infant Education;*" Stow's "*Training System,*" chap. xiv., and the Home and Colonial School Society's "*Infant-School Manual,*" "*Model Lessons,*" "*Religious Instruction,*" and other publications. These last have the advantage of exhibiting minutely the gradation of infant-school work.

33.—(3.) This training in number, well conducted, is very valuable in the way of preparing for future study. The great obstacle to a useful study of arithmetic in school is the abstract way in which it is often taught, owing to which the pupil never thinks of finding illustrations of what he is taught in the things that meet him in daily life. From the habit of close association between number and things which it gives him, this preliminary training will give him a great advantage in his lessons in the upper school, even if its spirit be not there carried out as it ought to be.

34. PRACTICAL NUMERATION.—(1.) *Significance of the numbers up to ten.* Each number must be taken separately, and a lesson be given on its power. Thus for the lesson on "one," write down on the board one line | one dot . one cross + one round O &c., and have them simultaneously repeated, *one* line, *one* dot, &c.; lay off on the lines of the ball-frame *one* ball; point to various things in the school, and have them similarly named, with stress on the number. Make the class mark down *one* line, *one* dot, &c., on their slates. In the lesson on "two," show how it is formed by putting another *one* to the *one* already had; proceed quite as in the former lesson; extend and vary the questioning thus:—a boy has two *eyes*, two *hands*, &c.; a cart has two *wheels*, &c., the class supplying the words in *italics;* and conversely, how many legs has a bird? how many scales has a balance? &c. Proceed similarly with the remaining numbers in separate lessons, always keeping in view to show how each number arises out of its predecessor by the addition of another of the same kind; and for this purpose introducing each lesson by a reference to the former.

(2.) *Reckoning with the numbers up to ten*—not only from one, but from other starting points—not only forwards but backwards—not only by odds but by evens—not only in regular order but following the number of balls the teacher may lay off—the children sometimes raising a number of fingers, or marking on the slate a number of dots or lines, corresponding to the number of balls laid off.

(3.) *The symbols up to ten, in the first instance, must be learned gradually.* To verify the child's knowledge of these he may be required to lay off balls, or mark down dots, corresponding to the symbol which the teacher writes on the board in silence, and conversely to write down the symbol for the number of balls laid off by the teacher.

(4.) *In passing beyond ten*, the eleventh ball should be laid off on the line below that which has the ten, the twenty-first on the third line, and so on; so that it may be seen how eleven is ten and one;

twelve, ten and two; twenty, two tens; fifty-five, five tens and five, &c. Each number will not require a distinct lesson.

35. THE ADDING OF NUMBERS.—(1.) *Adding the numbers under ten to each of them in succession; the receiving number being, in the first instance, kept constant throughout the ten additions.* Thus the first lesson would be on "adding *to* one;" 1 and 1 are 2, 2 and 1 are 3, 3 and 1 are 4, &c., the children counting in each case and then repeating the formulæ just set down. Then take the lesson backwards, and after that in any order, only keeping the receiving number the same; then apply the lesson by means of practical questions, thus: John had 1 penny, and his mother gave him 2 pennies more; how much had he? There was 1 tree standing at the water-side, and 4 more near it; how many trees in all? Do not be content with a mere number as the answers to these questions, *e. g.*, 3 to the first, and 5 to the second. Insist on the full answer, 3d., 5 trees, or, "he would have 3d," "there were 5 trees;" and the class should often simultaneously add, "for 1 penny and 2 pennies are 3 pennies, 1 tree and 4 trees are 5 trees. Devote a similar lesson to 2 as a constant receiving number; 1 and 2 are 3, 2 and 2 are 4, 3 and 2 are 5, &c., and so on up to 10, taking care, when the sum goes beyond 10, not to put more than 10 balls or 10 marks on the slate in one line, but carrying the excess to the line below. Encourage the pupils to put questions to one another, particularly of the practical sort.

(2.) *Adding the numbers under ten, in their order, to each of them in succession; the added number being now kept constant throughout the ten additions.* Thus, the first lesson would be the "adding *of* one;" 1 and 1 are 2, 1 and 2 are 3, 1 and 3 are 4, &c. For second lesson, 2 and 1 are 3, 2 and 2 are 4, 2 and 3 are 5, &c.; and so on up to 10. The exercises should be conducted precisely as the former ones. It may be well to observe at this point that already a series of not less than twenty lessons in addition alone is provided, excluding revisals. The teacher who thinks that this minute subdivision is unnecessary and that the children can get over more ground in one lesson, and who accordingly does not keep to one number for one lesson, understands neither the infant mind, nor the object with which the course is given. He destroys the gradation in it, fuses its whole materials into one mass, and in this way deprives it of any training power. This remark applies to the whole of infant-school instruction.

(3.) *Exercises of a converse kind to the two foregoing:*—whereas in those the two constituent numbers were given and the sum required, let any number now be given and its two constituents be sought, thus: what two numbers make up 4? 6? 8? All the pairs that make up any one should be obtained; thus, for 4, 1 and 3, 2 and 2, 3 and 1.

(4.) *Adding may be extended, so as to include three small numbers, and by degrees more.*

(5.) *The adding of tens, first with themselves alone*—10 and 10 are 2 tens or 20; 10 and 10 and 10 are 3 tens or 30, &c., which is just the adding of lines of balls instead of single balls; *and then with other numbers*—as 10 and 7 are 17, 20 and 5 are 25, 31 and 3 are 34. Each new number will not now need a separate lesson, for the process between 30 and 40 is just the same as between 20 and 30, and may be learned at one and the same time. Thus, let the teacher set off 20 on the two highest lines of the ball frame, and 30 on three lines lower down, say on the sixth and seventh lines; let him add to the 20 one ball on the third line, and to the 30 one ball on the eighth, then 2, then 3, &c.; it will easily be seen how 30 and 4 are 34, or how 32 and 4 are 36, just as 20 and 4 are 24, or 22 and 4 are 26, the 2 tens in the one case and the 3 in the other remaining quite unaffected by the process.

36. THE SUBTRACTING OF NUMBERS.—If it be understood that all the operations in number are to be conducted in the same spirit as those of addition, it will be sufficient to give the outlines only of the following ones:—

(1.) *Exercises in subtracting the numbers under ten from each other in succession, the minuend being in the first instance constant.* Thus 9 from 10, 8 from 10, 7 from 10, &c.; 8 from 9, 7 from 9, &c. Subtracting should be based on addition; 9 from 10 is 1, *for* 9 and 1 are 10; 8 from 10 is 2, *for* 8 and 2 are 10, &c.; verified at each step by use of the balls, &c.

(2.) *Exercises in which the subtrahend is constant*—as 1 from 2 is 1, 1 from 3 is 2, &c., 2 from 3 is 1, 2 from 4 is 2, &c.

(3.) *Exercises in which minuend and remainder are given*—as, what must be taken from 8 to leave three? &c.; also in which subtrahend and remainder are given, as, from what must 6 be taken to leave 4? &c.

(4.) *Exercises in double subtraction*—as, take 2 from 8 and other 2, 3 from 10 and then 4, &c.

(5.) *Exercises combining addition and subtraction*—as, add 4 to 6 and then take away 2, &c.

(6.) *Exercises with the tens*—as, 10 from 17, 10 from 30, 90 from 100, 30 from 35, 5 from 35, 6 from 8, and, with it, 6 from 48, &c.

(7.) *Applied exercises to be constantly given throughout the whole series.*

(8.) *Addition and subtraction may now be conjoined with numeration;* as, count up to 100 by twos, by threes, by fours, by fives, &c.; count back from 100 by tens, by fives, by fours, by threes, and by twos; or count back from 90 by threes, (90 being a multiple of three,) from 80 by fours, (80 being a multiple of four,) &c.* But the symbols for these larger numbers must be taught very slowly.

37. THE MULTIPLYING OF NUMBERS.—The "multiplying" of arithmetic is an artificial process derived from addition. Children have some difficulty in understanding its use, and always tend in their reckoning to fall back on the *natural* process of addition. To obviate the difficulty, the artificial process must be taught through the natural.

(1.) *Exercises in multiplying the numbers under ten by each other in succession, the multiplicand in the first instance remaining the same.* Thus:—

2 times	1 are	2	2 times	2 are	4
3	1	3	3	2	6
&c.	&c.		&c.	&c.	

The proper way to put these exercises is this:—

1 and 1 are	2, then	2 times	1 are	2
1 and 1 and 1	3,	3	1	3
1 and 1 and 1 and 1	4,	4	1	4
&c.			&c.	
2 and 2 are	4, then	2 times	2 are	4
2 and 2 and 2	6,	3	2	6
2 and 2 and 2 and 2	8,	4	2	8
&c.			&c.	

(2.) *Exercises in which the multiplier is constant.* Thus:—

2 times	1 are	2	3 times	1 are	3
2	2	4	3	2	6
2	3	6	3	3	9
	&c.			&c.	

This step is more difficult than the former; any operation is not seen to rise out of the preceding one so evidently. In each of the two steps now given one number only should be taken as the subject of lesson, either as multiplicand or multiplier, and the table of results connected with it thoroughly learnt.

(3.) *Exercises in multiplying tens and in multiplying by tens.*

(4.) *Exercises in decomposing numbers into their factors.* First give one factor; as, what must 4 be multiplied by to give 12? then require both factors, as, what two numbers multiplied by each other give 6, 8, 9? This exercise corresponds to the decomposition of numbers under the head of addition, with which it may be compared. The teacher must carry the eye of the child along with him in this process. Let him make rectangles and squares with the balls. Thus, if he wishes the factors of 12, he should present 12 to the class, (1,) in a line, (2,) in two lines, (3,) in three or four lines, thus:—

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* We have used the technical terms in the exposition for convenience sake, such as minuend, subtrahend, multiple, &c.; these, and any hereafter to be used, are addressed to the teacher, however, and should not be used before the class.

. . . . (1 × 12)
. . . . . . (2 × 6)
. . . . . .
. . . .
. . . . (2 × 4)
. . . .

It is an interesting exercise for him to make rectangles on the ball-frame, or to get the children to make them, then cause the class to count the balls in them by counting the two sides, and notice how the removal of a row or two rows affects the result; and conversely to make them construct rectangles of which he gives the number in the sides.

(5.) *Exercises in double multiplication by small numbers, and in the adding of two multiplications.*

(6.) *Exercises of application, e. g.*—5 boys get 2d. each, how much money was given to all? John passed 3 flocks of sheep in coming to school, having 6 in each, how many sheep did he see? 2 loaves at 2d., and 3 at 3d, cost how much in all? 3 of you hold up all the fingers in the right hand, how many fingers are up? 6 of you hold up all fingers except the thumbs, how many fingers are up? In each of these 6 seats there are 9 boys, how many are there in the gallery?

The field for putting these applied questions is widening, the teacher's ingenuity must task itself accordingly.

38. THE DIVIDING OF NUMBERS.—As multiplication is an artificial form of addition, so division is of subtraction; the same link of connection must therefore be kept up between division and subtraction.

(1.) *Exercises where the divisor is constant.* To give the class an idea of the nature of this operation, the teacher may count 10 or 12 balls in their presence, saying that he wishes to give 2 to each child and to know how many children he can give them to; or to arrange the children into rows of 2 each and know how many rows there will be. The result will be attained, in the first instance, by taking 2 and 2 successively till the number is exhausted, *i. e.*, by subtraction. The first lesson in division should be "dividing by 2;" for which purpose the balls on the frame may be arranged in successive lines below each other, 2, 4, 6, 8, 10, and 12. Then in first line (2.) there is one 2, in second line (4.) 2 twos, &c.; and the table of results is learnt, 2 in 2 once, and 2 in 4 twice, &c. For 3 the same arrangement of the balls may be adopted; but for numbers above that they must be placed in mass to get dividends large enough. There are no better illustrations of division than those which are got by arranging the children themselves in rows.

(2.) *Easy exercises with remainders.*

(3.) *Exercises in which multiplication and division are used correlatively*—as 10 in 30, 3 times, then 3 times 10 or 10 times 3 are 30.

(4.) *Exercises of application.* If 9d. be divided among 3 girls, what will each get? How many sixpences in 18d.? weeks in 21 days? &c. In one seat, where all the children held up all their fingers, there were 100 fingers up: how many children in the seat? &c.

39. COMBINED OPERATIONS.—Cross-questioning is of great use to the teacher; it enters largely into his art of impressing. It connects one point of the pupil's knowledge with another, and makes them all available for mutual illustration. It may be profitably resorted to in lessons on number. For this purpose combined operations may be performed almost from the beginning of the course. Thus, when the children have got a little of addition and a little of subtraction, they may be practiced on both adding and subtracting, as parts of the same question; so with multiplication and division.

The following example shows how cross-questioning may be used in connection with any number:—

On the Number 8.—What is the last below it? Count up to it? Next above it? Count four above it? Two numbers that make it up by adding? other two? Three numbers that make it up by adding? What must be added to five to make it? Take one from it? two? three? How much greater is it than four? than two? how much less than ten? than twelve? What taken from eleven will give it? How many twos in it? fours? What number divided by two will give it? by three? What does forty give divided by it?

Then the questioning may pass on to concrete numbers:—

Eight boys having apples put them into two rows, how many in each? then into four, how many in each? Each boy got an additional apple, how many had they all now? One boy ate his, how many remained? two, how many remained? only one boy of the eight kept his, how many were eaten? Other three boys came in each with apples, how many apples were there now? with two each, how many now? Four boys gave theirs to their neighbors, how many had each of these four? and how many apples were there in all? These eight apples were taken from a stall in which there were twenty, how many remained in the stall? And so on indefinitely. Such exercises may be made very amusing; and are valuable from the readiness they encourage.

40. PARTS OR FRACTIONS OF NUMBERS.—Elementary notions and operations in fractions are just as available in the infant school as those in whole numbers. The half of a thing is as easy of comprehension as the double of it, the third part as three times it; that two halves make a whole or three halves one-and-a-half as that two twos make four, or three threes nine; provided the illustration given in the two cases be equally simple.

(1.) *Exercises to illustrate what a fraction is.* An apple is to be divided between Willie and his sister, what must be done with it? it must be *cut.* Will it do to cut into a big piece and a small piece? No, they must get pieces of the same size. Look at me, now, while I cut it (teacher holding up the two pieces.) Are they about the same size? Yes. Then each of them is called *a half.* How many halves in the whole? Two. Could I divide an orange into two parts of same size? Yes. What would each part be? A half. Here is a bit of string, of paper, of wood, &c., which I shall divide into two bits of same size; what do you call each? A half. Then if I put two halves together, what do they make up? The whole. Take another apple, and illustrate a third in the same way. The subdivision of the halves will show how fourths or quarters arise, of the thirds how sixths and ninths arise, and of the fourths how eighths. The fifths and sevenths must be explained by cuttings for themselves. Beyond these fractions it is not necessary to go. For further illustration it would be desirable to have a rod, say a yard long, divided into halves, fourths, and eighths, and another into halves, thirds, and sixths. The solid cube divided into eight parts, and another into six parts, would also be very useful. But the balls on the frame, and counters of any sort, may also be turned to account; for six balls may be divided into two groups or three groups, to illustrate halves, and thirds, and so on.

(2.) *Nature of the exercises in fractions. In equivalence;* how many halves in one? in two? &c., how many thirds in one? in two? &c., how many fourths in one? in two? &c.—how many fourths in a half? in a half and a fourth?—how many sixths in a half? in a half and a sixth?—how many sixths in a third? &c. *In addition;* a half and a half make? a half and a half and a half make? a half and a fourth make? one third and one third make? one third and two thirds make? one fourth and one fourth make? one fourth and two fourths make? one fourth and one half make? &c. *In subtraction;* one half from one gives? from one-and-a-half gives?—one fourth from three fourth gives? from one half gives? from one gives? from one and a fourth gives? &c. *In multiplication;* what is the double of a fourth? four times a fourth? three times a third? three times a sixth? &c. *In division;* how many halves in one? in two? in one and a half?—how many fourths in one? in one and a half? in a half? &c. *In comparison;* whether is a half or a third the greater? a third or a fourth? a half or three-fourths? a fifth or a sixth? &c. *Applied questions* may be given under all these heads, especially with the pence table. What is a farthing? how many in twopence? difference between a penny and a farthing? a halfpenny and a farthing? What must you add to a halfpenny to make twopence? &c. It may be repeated here that for verification of the results the children should manipulate with the illustrative apparatus as well as the teacher.

41. The ball-frame is the principal means of illustration used in infant schools; it is proper, therefore, to give the following cautions as to the manner of using it:—(1.) It is not to be used beyond the pupil's ability to follow it with the eye. Rapid operation with 40, 60, or 80 balls does nothing to aid the observation; it can neither lead to, nor verify, any result. When the frame is used at all, it must give *bona fide* illustration. (2.) It must be used as a means, not as an end. The child is not learning the ball-frame, but operations in number through its help. Particular manipulations, therefore, need not always be repeated after they have served their purpose. It has already been indicated that the different operations, after being performed with the aid of the frame, are to be performed without it.

42. These lessons in number may be assumed to be given by way of collective-lesson. Interest, and rapid distribution of questioning, are the elements of success in such teaching. To be interesting, the questions must deal with familiar things, must be varied, and must be simply expressed; in a word, must come into contact with the child's daily experience. To be rapidly distributed, the teacher must have at command all the possible forms in which questions may be put; with which view he should, at the beginning of his career, write down all these forms, and learn them as so many formulæ. He has then only to vary the *things* mentioned in the questions, which a little practice will enable him freely to do. It is not to be expected that a lesson of this nature can succeed unless the children feel that the teacher speaks from a full mind, and is quite at ease.

43. STANDARD MEASURES.—Lessons on number must make the

child familiar with the various units of measurement used in the affairs of life. These are excellent illustrations of the different operations; and, besides, he needs to know them. He must become familiar—(1.) With the units themselves; (2.) With the relation of different units of the same kind; and (3.) With the application of them to practical purposes. For the first of these ends, the units must be constantly before him; for the second, he must see them compared, and with his own hands compare them; for the third, he must see them applied, and with his own hands apply them, to the measurement of things about him. In this way, what appears so formidable a task when presented in the shape of Reduction-tables to be learnt, will become an easy, natural, and most interesting exercise of his senses and his activity. It is needless to carry him through all the tables; those in most common use will suffice: and the first place is due to—

44. *Number as applied to Value, or the Money-table.*—The child necessarily becomes familiar with this to a certain extent without any special training, and the preceding exercises have assumed such an acquaintance; but it is well that distinct practice in the use of money be given. He must complete his acquaintance with all the coins therefore, with farthing, halfpenny, penny, threepenny-piece, fourpenny-piece, sixpenny-piece, shilling, florin, half-crown, crown, half-sovereign, sovereign, and one-pound note. Their forms should be examined, their sizes, colors, weights, sounds, and the stamps upon them; their points of resemblance and of difference noted, so that he may be able to tell them at once on seeing them, to describe them, or recognize them on description. He must be exercised in adding, subtracting, &c., different sums, in every variety of language. And he should go through little processes of buying and selling in imagination, in which he shall be accustomed to give back and get back the proper amount of change. Actual counting and handling of the money is indispensable.

45. *Number as applied to size* (linear.)—In going through a parellel process with this table, the teacher should have beside him an inch measure and a three-foot rule, to show the foot and the yard. For verifying operations, he should have twelve inches, some three-inch measures, six-inch measures, and three foot-measures; slips of wood cut to the size will do. The child should be able to tell them all at sight. The field of questions on their relative size is very wide, thus: (holding up foot-measure) how many of the smallest measures (inches) in it? what part is the inch, then, of foot? How many of the next smallest (3-inch measure) in it? of the next? How may it be made up by three slips (half-foot, and two of the three-inches?) of four slips?

of five (6-inch, 3-inch, and 3 inches?) of seven? In each case the process of comparing should be gone through. When the children are familiar with the measures, things should actually be measured. What is the breadth of this book? its length? its thickness? the hight of this picture above the floor? the length of the picture? of the pointer? of some of the children selected? the depth of this cup? this jug? the length, breadth, and thickness of this cube? the dimensions of the school-room floor by admeasurement? &c. Draw a line on your slates an inch long, up-and-down? the same even along? the same slanting? two of them? six in order? the same half-an-inch long? alternating an inch and a half-inch? two inches long? alternating two inches and one inch? three inches? &c.

46. *Number as applied to weight.*—If the spirit of the previous exercises be understood, it can not be necessary to exhibit the details of those upon weight. Suffice it to say, that the children must acquire their notions of weight by weighing. For this purpose, the teacher should have beside him a pair of scales, with the different current weights, 1 lb., 2 lb., ½ lb., ¼ lb., 1 oz., 2 oz., ½ oz., ¼ oz.; and duplicates enough to show equality, 16 oz. for the lb., two ½ lb., four ¼ lb., two 1 oz., two ½ oz., four ¼ oz. For weighing, he should have sand, small shot, or some equally convenient thing; and he should also often weigh common articles. Let the questioning be varied as before.

47. *Number as applied to square measure.*—The most convenient apparatus is a diagram of the square inch, square foot, and square yard on the school wall, white lines on a black ground; the yard divided into its nine feet, and the foot into its 144 inches. Handkerchiefs or towels may easily exemplify the yard and the foot. Any rectangular object in the school, such as the slate, the board, the map, the picture, &c., are convenient for this measurement.

48. *Number as applied to capacity.*—In liquid measure, the gill, the pint, the quart, the gallon, are the measures to be shown. In dry measure, the peck, the ½ peck, and the ¼ peck will suffice.

Lastly, *Number as applied to time* gives an important series of lessons, though there can not be ocular illustration with them. Experience, however, makes them quite intelligible; the second, the minute, the hour, the day, the week, the month, the year, should all come under review.

49. The steps in this series of lessons on applied number must be taken gradually, just as the child can bear; each one being thoroughly mastered before another is taken up. They afford scope for all the fundamental operations, and particularly for fractions. The

Reduction-tables should be learned after the practical exercises in each kind of measurement; but the children, so far from finding this difficult, will be able to construct the tables along with the teacher on the board.*

3. *On Color and Form.*

50. Color and Form should have a distinct and no unimportant place assigned to them amongst the instruments of infant-school training. They are two properties of bodies the most general, and, for the child, the most distinctive; they both appeal to the sight, and are therefore very early recognizable; they occur in endless varieties, and therefore afford ample scope for the training of the observation. Lessons on Color and Form are necessary to enable the child to form correct impressions of the things about him. But they have another aspect, the latter of them particularly. Color and Form are the elements of *representation*, pictorial and linear. An acquaintance with them is needed, therefore, before we can interpret such representations; a power of much consequence, considering the wide circle of things of which we can learn only through representation. Besides, the child is at a later period to be instructed in certain departments of the art of representation, to wit, drawing and writing; for both of these the lesson on Form is a valuable preparation.

51. Color and Form have been mentioned together because they are the proper complements of each other. Their instrumentary character in training differs, however, in these two particulars: (1.) Color, as a property of bodies, is recognized before Form. From experience we see that it fixes the attention of children earlier than Form. The reason is that the recognizing of it is an exercise of simple sensation only; whereas the recognition of Form is an exercise of complex or double sensation. Color is recognized by simple sight; Form by sight combined with motion, the motion of the muscles of the eyeball. Practically, then, we speak to infants of Color, before we speak to them of Form. (2.) Though earlier available, Color is less useful as an instrument of training than Form. The tints and shades of Color are, no doubt, exceedingly numerous, and the effects producible by their combinations, are of inexhaustible variety; but the child can not and need not notice all these. It is enough if he can discriminate the leading species (hues) of Color with a very few of their most commonly occurring modifications as to tint or shade.

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* There are a few little works which may be profitably consulted by the teacher on this subject; of these may be mentioned, "*Arithmetic for Young Children*," published originally by the Society for the Diffusion of Useful Knowledge; "*First Ideas of Number for Children*," published by Parker, London; and Tate's "*Arithmetic.*"

But the variety of Forms which he needs to discriminate are indeed endless; of the common things about him no two have precisely the same form. And from the nature of the sense to which it appeals, variety of Form is easily distinguishable to a much greater extent than variety of tint and shade in Color.

Color.

52. The design of the lessons on color may be stated as twofold. It is (1.) to enable the child to discriminate the commonly occurring colors; and (2.) to cultivate his taste, so far as to habituate his eye to those combinations of color that are known as harmonious. Any experimenting on the physical relations of colors beyond this, such as explaining the effects of their admixture, or the numerical ratios involved in their harmony, is quite beside the mark. We have not to deal with color as a science or as an art, though it is both, but simply as a property of bodies. The elements of instruction are few, but there is constant room for their application.

53. As a natural order for the lessons on color, the following might be adopted:—

First series: On *white* and *black*, with their mixture in *grey*. White and black are not, properly speaking, colors; white is the neutralization of color, black is the absence of color. They are the extremes, however, within which the colors lie, and by which they are measured; so that a knowledge of them is necessary. And they first present themselves to notice; *light* is represented by white, *darkness* by black, and by reference to light of the sun and the darkness of night the notion of white and black is given.

Second series: Red, blue, and *yellow.* These are the three primary colors, so called, which produce all other colors by composition in various proportions, but can not themselves be produced by any composition.

Third series: Purple, orange, green. These are the secondary colors, so called, produced from the admixture of the primary thus—red and blue giving purple, red and yellow giving orange, and blue and yellow giving green.

Fourth series : Russet, olive, and *citrine.* These are the tertiary colors, so called, produced by admixture of the secondary, thus—purple and orange give russet, purple and green give olive, orange and green give citrine.

Fifth series.—Those now named are all the hues of color; but each of these hues has different tints and shades, according as it is mixed with white or black, more or less. Thus red may be varied into crimson, scarlet, pink, &c.; yellow may be varied into lemon, straw, primrose, &c.; and blue may be varied into stone, sky, slate, &c.

54. For giving these lessons on color, the teacher may have them exhibited on a board either together or singly; but the best possible color-board is one made by himself and the children with the help of a box of paints and white card. If he can not get a board for the purpose, he may procure other apparatus in its stead. He may get small squares sewed with the different colors of worsted, in the manner of a sampler; or he may find the colors exemplified in the skeins themselves, in bits of merino, silk, or ribbon, in paper, wafers, glass, &c. After the children have *observed* any color, red, for instance, they should single it out of many others; then be required to name things which show it, as blood, a rose, and other flowers; the robin, and other birds; sealing-wax, a soldier's coat, binding of a book, shawl, hair, &c.; also to think at home of as many things as they can, and mention them in the next lesson. A color need not at this time be distinguished into its different shades.

55. In seeking to give to the child some perception of harmony in color, whilst he may be told that certain colors agree beside each other, and certain others do not, it is to be remembered that it is the eye that is to be trained in the first instance, and then the mind. A sense of concord in music, whether in melody or harmony, grows up in one after hearing it exemplified frequently; without this no explanation can have any meaning. So in color; the eye must have the opportunity of dwelling frequently on harmonious combinations. When it is accustomed to these, it will instantaneously be offended by a combination which is not harmonious. The presence of all the three primary colors, either pure or in combination, being required to produce harmony, it will be understood that red and green harmonize, as also yellow and purple, blue and orange, green and russet, orange and olive, &c. This principle should guide teacher and children in the combinations they make of their slips of color in designing patterns. An eye familiar with such juxta-positions will not tolerate such as yellow and orange, blue and purple, red and orange, blue and green, orange and russet, and the like.*

Form.

56. The lesson on Form deals with forms of all the kinds of dimension; with those of one dimension or lines, those of two or plane

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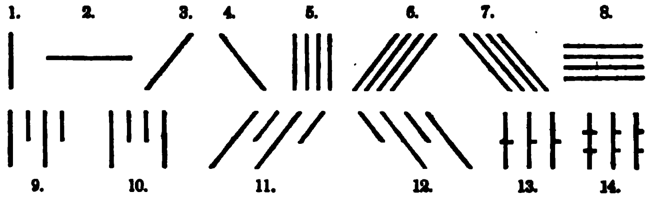
* For information on the subject of color, see Redgrave's little "*Manual of Color*," and corresponding chart; also, "*Hay on Harmonious Coloring*."

figures, and those of three or solids. In each case the forms must be traced, as exemplified in the common things of life.

57. To commence with lines; the annexed diagram represents what may be the first series of lessons, or some of them:—

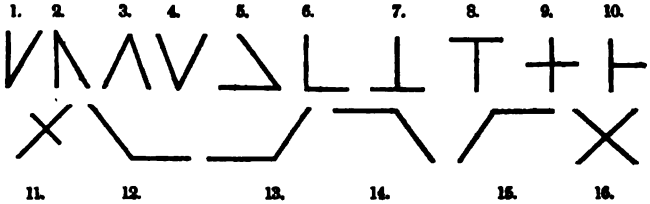
I.



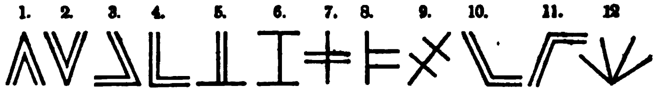
The simple straight line gives materials for a large series of lessons, as there are various ideas to be developed in connection with it, viz., straight, up-and-down, (perpendicular,) even-along, (horizontal,) sloping, equality of length, equality of thickness, equality of width between, bisection, and trisection.

58. Combinations of the straight line suggest another series of which these are examples:—

II.

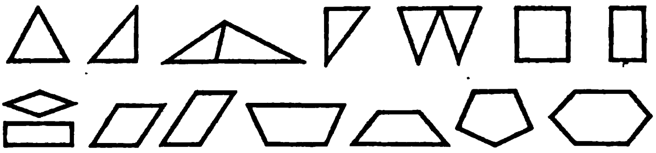


Extended by duplication thus:—



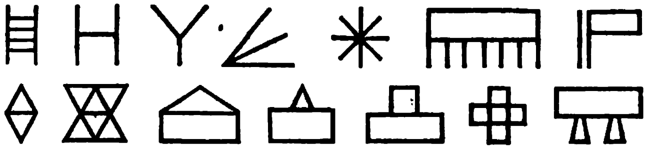
59. Plane figures may be grouped according to the number of sides that constitute them; triangles of various shapes, foursided figures comprehending the square, the rectangle, the rhomb, the rhomboid, the trapezium, the polygon, including the pentagon, hexagon, and decagon.

III.



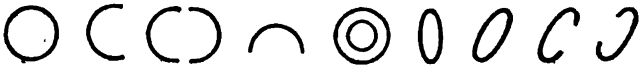
60. There is no invention exercised in the construction of these forms; but, when the children have had some practice in imitating, they should be encouraged to invent, *i. e.*, to put together the elements already learned into new patterns, combining line with line, or figure with figure, or figure with line, thus:—

IV.

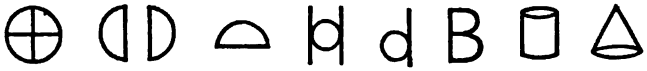


61. The curved lines are more difficult to deal with; but some practice must be given in making them also, since they occur in the letters, and in many familiar things. Thus:—

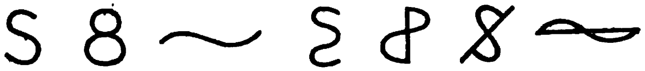
Simple Curves.



Curves with straight lines.



Curves of contrary flexure alone and with straight lines.

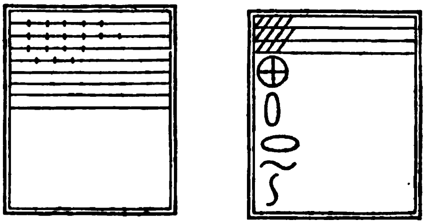


62. The mere imitation of these various forms on their slates interests the children; but the interest is greatly increased when the different forms are applied to practical purposes. This application is twofold: (1.) to commonly-occurring *forms*; (2.) to commonly-occurring *things*. Under the first fall the letters of the alphabet—both small and capital, both in print and in script. The alphabet-board is

useful here and also the letters separately on slips of mill-board; but the teacher should draw them on the blackboard, classifying them according as they are straight-line letters or curved letters, and noticing the parts they are composed of with reference to the elements already learned. A similar course should be followed with the numerals, first the common or Arabic characters, then the Roman.

63. But the application to things is more interesting still, from the appeal it makes to their curiosity and their imagination. All forms from the very simplest may be found represented in things: straight lines and figures, as in a pointer, pen, pencil, comb, book, picture, window-frame, arrow, sword, stool, table, house, castle, box, star, cross, door, &c.; curves, as in penny, sixpence, target, cup, saucer, bottle, jug, whip, walking-stick, candle-stick, extinguisher, spire, cart-wheel, spinning-wheel, knife and fork, spoon, basket, ship, pillar, chimney, flag-and-staff, clock-face, a leaf, an apple, cherry, plate, tub, bell, gun, key, drum, trumpet, a cheese, a loaf, an egg, the moon, &c., &c. The thing should be associated with the form, and some conversation held upon it, or some little story given in connection with it, whilst the outline is before the eye.

64. The apparatus for the lesson on form, so far as it has been described, is very simple; all that is indispensable is the blackboard for the teacher, and slate and pencil for the class. It will be found convenient to have the slates ruled, not over their whole surface, but partially; so as to give the children a little help without restraining their freedom of imitation. Perhaps the most convenient form of ruling is this:—



For straight lines and figures.

For curves.

On the one side the upper half is ruled, and a few points put on some of the lines; and, on the reverse, a few lines ruled for writing, and the simplest curves are represented.

It will contribute very much to the regularity and uniformity of the lesson, that the slates should be the property of the school, each class having its own set attached to it in its own box. Though not indispensable, it is serviceable to have diagrams of form: a board, *i. e.*, on which the geometrical forms are represented, both planes and solids, with their proper shade. Very serviceable, also, is a number of slips of wood, or laths, by means of which the children can construct any of the forms, either straight lines or rectilinear figures, which the teacher draws on the board. Thus, all the examples in §§ 57–60 may be exhibited, the requisite number of children holding the laths, in vertical lines, in slanting lines, in even-along lines, in triangles, rectangles, &c., as the case may be.

65. There are two senses in which solids may be made materials for lessons on form. According to the one, the geometrical solids are exhibited and their outlines made familiar; this is of much service, and the teacher should have a box of solids for this purpose, and a series of representations of them, shaded if possible. According to the other, by the use of solids themselves, such as cubes, parallelopipeds, cylinders, cones, pyramids, &c., the invention is taxed to construct different forms. These, in fact, are so many bricks, stones, pillars, towers, arches, &c., with which the child becomes a builder. Such engagement seems well suited for an individual child or for a family, as it must foster the taste, the imagination, and the habit of perseverence; and it may be provided in the play-ground of the infant school.

66. The lesson on Form may be given either to the whole school collectively, or to separate groups, the latter being the better way. One caution, however, should be given: it must be viewed as a lesson, and not as a mere device for occupying the children while the teacher is otherwise engaged. Doubtless, it may be made very interesting and amusing; nevertheless it is instruction proceeding upon a principle, in systematic order, and with a view to the attainment of certain results. The teacher must bestow some forethought, therefore, on its arrangement, and exercise adequate superintendence over the class engaged in it.*

67. Subjoined are examples of the lesson on Form in different stages:—

I. On the Perpendicular Line.

1. Teacher holds in his hand (suppose) a bit of string, stretched by some object attached to its other end; children notice its appearance; teacher then holds in

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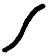
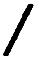
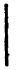
* Hints on the nature and order of the lesson or form may be found in works like the following:—Richson's "*Copies*," (National Society;) "*Drawing for Young Children*," (Society for Diffusion of Useful Knowledge;) Krüsi's "*Manual*," or the summary of it in the Home and Colonial Society's "*Infant-School Manual*." But any of the better kind of elementary manuals of drawing, such as Tate's or Carpenter's, will suggest many things to the teacher.

his hand a bit of string which is curled and twisted, from having been rolled round something; children notice the difference: the one even or straight, the other not.

The teacher similarly contrasts the pointer with a walking-stick or cane; also, a straight lath with a slightly-bent one.

2. Again, the teacher holds in his hand the straightened cord, (1.) perpendicularly, (2.) slantingly, and the children notice the difference; the pointer, stick, lath, &c., held (1.) perpendicularly, (2.) slantingly. This will give the further notion of *even-up-and-down;* which word may be used for a while instead of perpendicular.

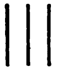
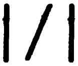
3. Teacher asks them to watch him as he draws an even-up-and-down line on the board; they follow with the eye; he asks how it was done; examines whether it is *straight*—whether it is *even-up-and-down;* places the pointer or lath along it, and they see it is. Would this do?  Why not? This?  Why not? This?  Why? Who can draw one on his own slate? All draw one; teacher looks and criticises a little.

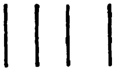
4. Teacher asks for any common things in shape of an even-up-and-down line? A pointer held up; that is designed for ——? a ruler, that is ——? a flagstaff, that is for ——? a mast of a ship, that is for ——? some trees, which grow in the ——?

5. They then draw on their slates a number of these even-up-and-down lines.

NOTE.—One idea is enough in one lesson. Here it is the idea of even-up-and-down. The children need not at present attend to the *distances* of the lines from each other, when they make a number. Another lesson similarly illustrated would be given to the slanting line to the right, another to the slanting line to the left, another to the even-long (or horizontal) line. So a distinct lesson would be given to equality in length, equality in thickness, equality in slope, and equality in width, thus:—

II. *Equal Width or Distances.*

1. Teacher draws  Count how many lines are there? what kind of lines? would this be the same?  Why not?—what is between every two lines? a space—how many spaces are there? If I draw another line, how many lines? spaces?

2. Teacher tells them to notice that spaces are of same width—measures them before the class. If I want all spaces to be the same, then, would this do?  why not? How do you know? You don't need to measure that, you see it. Now, make three even-up-and-down lines yourselves on your slates. They draw three, and the teacher criticises a little.

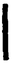
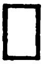
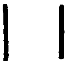
3. Think of any things we could get to show even-up-and-down lines with same width between them. We could do it with fingers—three children hold one finger each together—with arms in same way—with pointers or laths—some are

called on to put these in position. Another thing yet in the school which shows them? The ball-frame. Count the wires and the spaces.

Any thing not in school which shows even-up-and-down lines at equal distances? A railing, which is made ——? and is used for ——? a bird's cage, which is made of ——? and is used for ——? grating in some windows, which is made for ——?

4. Now make some rows of even-up-and-down lines on your slates.

III. On the Oblong or Rectangle.

1. Teacher draws it by degrees; thus,  what is this? an even-up-and-down line. what is added here?—and here? and here?  Another way of making it—What are these?  Two even-up-and-down lines of same length. Join them. How many lines in all? how many *kinds?* how many of each kind? Are they separate? how many corners? What is within the lines? a space? Are the lines of same length? any two of them—teacher measures them—pupils draw one for themselves, and teacher criticises a little.

2. Name any thing you know which is drawn by four lines in this way—a slate, which is for ——? a blackboard, which is for ——? a map, which is for ——? the ball-frame, which is for ——? a book, which is for ——? Count all the sides in these. Also a window, which is for ——? the door, which is for ——? a sheet of paper, which is for ——? &c.

3. The pupils proceed to draw figures for themselves, the teacher giving them directions how to use the lines ruled on their slates, and the points indicated on them.

IV. On the Circle.

1. Teacher holds up a penny, sixpence, &c.—gets the shapes named successively—holds up a circle cut in paper—another shape more or less nearly circular—children observe difference.

2. Teacher draws on board a figure nearly circular—then a circle, the children following the chalk—teacher takes a line and measures across the center-point, and shows the children how this is always the same—draws a few such lines (or diameters) through the circle—then through the other nearly circular figure, and children observe the difference. They draw one on their slates.

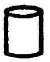
3. Things named which are round—various coins—cart-wheel, used for ——? and which well illustrates the circle; a cheese, for ——? a chimney, for ——? a hoop, for ——? the sun, which ——? &c.

4. Children then proceed to construct several on their slates.

NOTE.—Lessons on the forms of solids are the most advanced of which they are capable, and differ from the preceding lessons in this particular, that they are not fully or not at all within the child's power of drawing. But he should be taught to recognize the forms of all the solids when he sees them drawn; which he can not do till his eye is educated. With this view lessons should be given on each of the solids; as the cube, prism, pyramid, cone, &c. Subjoined is the example of a lesson.

V. *On the Cylinder.*

1. *To give a general notion of its form*, teacher holds it in his hand before the class—turns it on its axis vertically—the same horizontally—rolls it. It is *round*—holds its end toward the class—they recognize the circle—two ends and surface—teacher sets it on end—children name any thing corresponding in form, as a pillar—lays it down—children name something corresponding to it in outline, as a roller. Length varies; to show which it should be cut parallel to its end in one or two places.



2. *To explain its form in the drawing before the class, it being drawn on end.* Teacher places it on end—children trace its outline—its round front, how much of it seen?—the two vertical lines that bound its front—part of its base line—its top, not quite circular in appearance—all these lines actually traced—teacher draws it, or points to drawing—children trace the corresponding lines.

3. Children name a number of things cylindrical in shape, to see that it is a common form—pillar, roller or baton, tin box, a tree so far, a map or sheet of paper rolled up, a pitcher, a hat so far, &c.

4. Children intimate cylinder on their slates.

NOTE.—If the drawing before the class be shaded, this must be explained by reference to their experience. They observe things casting shadows, men, pillars, trees, &c.; thus they will understand on what side the shade should be. The drawing of a cylinder in other positions should be deferred to other lessons.

4. *On Singing.*

68. Singing is absolutely indispensable in the infant school. The child is naturally sensitive to sweet sounds. The mother sings to her child to soothe its sorrows and enliven its joys. The child sings to itself; almost unconsciously indeed. If it be not in possession of any melody, it will yet put sounds together; if it have learnt a melody, it will often be heard rehearsing it. Singing is a vehicle by which it expresses its feelings; producing an effect on the child which is keenly pleasurable at the moment, and which leaves him in a calm, pleased state. Every one who has seen the cordiality and unanimity with which children break out into a simple melody after some stretch of attention will understand the prominence we assign to singing. It is in infancy that the taste for singing must be founded; the period invites us to do so; if we neglect to cultivate it then, the inspiring of it will be a work of more difficulty at any future time.

69. In the infant school singing should be taught by ear and not from note. Skill in music certainly implies the power of reading from note, and an acquaintance with grammatical structure. But the study necessary to acquire this skill must be deferred till a later date. It

will equally perplex and repel the child at this stage. If we give him a taste for music by accustoming him early to its beautiful effects, he will be allured to the study in due time. At present, therefore, he learns his melodies by listening to and following his teacher's voice.

70. With regard to style of music, there are several kinds of errors made. A very common one is the exclusive, or almost exclusive, use of sacred music, perhaps even of psalmody. One of the ends—we may say the highest end—of learning to sing, is certainly to sing for devotional purposes; and the child, too, must use his gift of song in solemn worship. But whilst he must know some sacred songs, it does not suit the character of his own mind or of the music itself that he should be always engaged with this style. He must have the means of expressing the ordinary joyousness of his years; which is found in secular melody alone. Since the child sings from lightness of heart, he should be taught lively songs. The graver rhythms are unsuitable for him; and the use of the minor mode is a gross incongruity in the infant school.

71. To describe suitable melodies more minutely:—They should preserve a medium in respect of pitch, ranging between the notes D (below the first line) and E (fourth space) on the treble staff, since the voices of the children are tender, and liable to suffer from straining; the intervals between the notes should be of the simplest kind, viz., diatonic and common-chord, modulation from one key into another being, as a rule, avoided; the rhythm should be simple and well marked, such as $\frac{2}{4}$, $\frac{3}{8}$, and $\frac{6}{8}$, and then $\frac{4}{4}$ and $\frac{3}{4}$.

72. Singing in two parts or more should not be pressed on too hastily. The more advanced children may be taught to sing a second part, but it is not necessary; simple melody is attractive enough to attain all the ends of the exercise. The teacher may sing a second part at pleasure as accompaniment.

73. The difficulty in finding suitable songs lies as much in the words to be sung as in the tune itself. Verses of a purely didactic character, or which are filled with abstract sayings, are not suitable. Still worse are rhymes of a professedly utilitarian kind, arithmetical or geographical tables, and the like. Speaking generally, whatever carries the child's thoughts to the objects that he naturally finds pleasure in is suitable, so far as matter is concerned. Pieces on beautiful natural appearances, on natural objects, on animals, or stories in the ballad style, may safely be used, provided their language be simple and their sentiment correct.

74. The singing, if it is to cultivate the taste, must be done tastefully. The children may not sing artistically, but they may be ex-

pected to sing in tune without shouting, and with becoming light and shade in expression. If there be a child who seems unable to keep in tune with the rest, *i. e.*, whose ear requires more exercise in tune than the average, he should keep silence during the singing till he has attained sufficient cultivation to join in it, and not be allowed to mar the singing of the others.

For singing, in its bearing on discipline, see § 16.

5. *On Geography.*

75. Geography is one of the natural sciences, having for its subject-matter not ideas, or symbols, or formulæ, but *things*. On this account it was introduced not very long since into the course of school-studies. It was designed as a counterpoise to the too exclusively verbal and abstract character of that course. It has not, for the most part, been taught in such a way as to serve the ends of its introduction, having been greatly confined to what is really an abstract study, the study of the position of places on the map. It should be well understood that geography, viewed educationally, is a *study of things*. If this its true character be preserved, it will readily be seen that there is an aspect of it in which it is fit to be handled in the infant school. It were to be wished that there were a more familiar name to give to the study in this stage. The name "Geography" is too scientific. The lessons contemplated in it really fall under the object-lesson. They are a series of object-lessons on the earth, with its more striking external aspects, its products and occupiers; and we treat of them separately from the object-lesson in general, only because they are the germ of what in the subsequent stages of the child's progress is recognized as a distinct and important branch of study.

76. Map-geography, in the ordinary sense of the word, is no part of the work of the infant school. It is very common to begin geography by setting before the class—after telling them what the shape of the earth is, and what a map is meant to be—a map of Europe; and to give them the names of the countries, mountains, rivers, bays, islands, straits, towns, &c. But this is altogether an anticipation of the work of the upper school. In the infant school it gives a certain knowledge of the piece of paper before them called a map; but as the children can comprehend neither what a map is, nor what it is for, it gives them no *real* instruction whatever. It is to no purpose that it be made simple or even amusing by the teacher's ingenuity, and that the children become actually expert in naming the places pointed out. The work itself is not that which should be engaging their attention. They can not at this stage realize the "geography of locality or relative position."

77. The geography of the infant school should be pictorial and descriptive. Commencing with the elements of natural scenery that fall under the child's observation, and carefully noting their distance and relative direction from the school and from each other—the hill, the mountain, the brook, the river, the plain, the forest, the moor, the rich mold, the island, the sea, the cliff, the cape, the castle, the village, the city, that may be seen in prospect from the school; the productions of his own land—its animals, its trees, and flowers, and herbs, its metals; the men of his own land—their occupations, their customs, their habits, their food, their clothing; it should seek to make the child realize the corresponding features of other lands and climes by comparison with what it has observed in its own. We should ever set before his eye, when possible, specimens and pictures of foreign products and scenes, and for the rest appeal to his imagination to take off the impressions from our vivid descriptions. Such is an outline in brief of the course the instruction should follow.

78. *Examples of subjects of lessons in Home-Geography.*—Let the subject be "*rivers.*" What a variety of instructive matter is suggested by it! their source in the little springs welling forth amongst the hills from the bosom of the earth—the descent of the many small rills from the mountain side to the valley—the length, depth, and gradual increase of the main stream—the influence of the season of the year upon them—the smooth, clear, low water in summer, and the dark, swollen, angry torrent in winter—the character of the land through which they flow for fertility—the uses to which man puts rivulets and rivers—the one a source of power for industrial purposes, the other the highways of commerce and of traveling, both adding to the riches and civilization of a people. All these considerations are involved in the idea of "river;" and there are few of them that could not be illustrated by reference to the brook that may pass the school or the river that may flow through the city.

Let the subject be "*mountains.*" There may be some hill near the school which the children may have beguiled a summer's day in climbing. They are to observe its shape—whether it be broad and flat, or steep, and in part precipitous—whether it be a single hill, or one of a range—the matter of which its surface is composed, whether earth or rock in any of its forms—the covering of its surface, whether grass, or heather, or shrubs—the animals that may be browsing on its slopes—the streams which may leap down its sides—the climate varying with the hight till they reach the cool of the summit—the cornfields at its base, extending more or less up the slope—then the woods, and, lastly, the grass—the toilsomeness of the ascent, and the time required for it—and, perhaps, the metals or minerals dug out from it.

Let the subject be one of the phenomena of "climate."—On a "*winter's day*" let them observe the thick flakes of the falling snow, whitening the face of nature, or the hardening influence of the clear frost covering our lakes, ponds, and roads with ice—the rapid motion and the thick covering necessary for comfort—the fires we need in our houses—the care we need to take of our animals—the unproductiveness and barrenness of nature at the time—the short day, and the long night. On a "*summer's day*," again, the mild air—the clear, blue sky—the moderate motion and the lighter clothing—the face of nature beaming with animal life, and clothed with the rich vegetable green—the treasures in the fields—the long day and the short night.

In these lessons on geography, scientific order is of little consequence. The true point of commencement is with what the children see and know. Thus, if we give a lesson on "rivers," we just take them in imagination to the river side, and exercise their senses on what is before them. The river is (suppose) broad, deep in the middle, shelving, clear or brown, smooth or broken in surface; its banks are pebbly, or rocky, or grassy, and so on. For the next lesson, we take them to a spot further up where different phenomena are seen, and then further up still to its source; next take them down the river till they come to the point at which it falls into the sea, or into some other river. Proceed in the same spirit, and by similar subdivisions, with mountains, matters of climate, &c., constructing the lessons entirely after the manner of the object-lesson, as exemplified in §§ 26–28.

79. It is when these and a series of such minute pictures of "home" are conceived, that the child's imagination can take wings to other lands. He can expand the idea of the river at home till it reaches the Rhine, or the Nile, or the Mississippi, or the Amazon, and the circumstances of the one till they pass into those of the others; the mountain at home till he shall see the Alps, with their fertile valleys and lower slopes, and their woods above, reaching upwards to the everlasting snow; or till he shall conceive Etna with its teeming sides and magnificent prospects and the smoke rising from its volcano top. From the "winter's day" at home he may realize the dreary desolation of the Arctic zone, with its freezing temperature, its wilderness of ice, its stunted vegetation, its dearth of animal life, its short cheerless days, and its humble fur or skin-clad dwellers; and the "summer's day" at home may lead him to fancy himself beneath the scorching blue sky of the tropics, with the want of rain, the rapid and

abundant growth of plants and animals, the overpowering heat of day and the dews of night, the jungle or the desert.

80. In this series of lessons the names of countries are sparingly dealt with, a few typical ones alone being given: typical, *i. e.*, of the different climates, but without map in the meantime. And it will be observed that the lessons are not expressly given on particular countries, as Egypt, or Arabia, or Lapland. A country is too vague an idea for a child at this time; he must have some definite object on which to rest his conceptions. Hence, the series is given on natural features, of which he can see certain examples around him, and these are stated as being in particular climates or countries. He associates the country with the object, not the object with the country. And the same holds in the series as now to be continued.

81. To have the means of describing the different regions of the earth more particularly, the teacher should proceed with a series of object-lessons on their productions. Thus, the lion, elephant, camel, tiger, wolf, bear, hyena, kangaroo, buffalo, reindeer, dog, sloth, serpent, whale, shark, eagle, vulture, ostrich, &c., are for geographical purposes so many types. So in the vegetable world are the palm, the olive, the bread-fruit, the vine, the cotton-plant, the tea-plant, the coffee-plant, the sugar-cane, rice, maize, cinnamon, cedar, mahogany, and the like. So with respect to man and his habits would be a series on the articles of food, clothing, and building. In the course of these lessons some of the principal countries—*not every country*—would have been noticed so frequently, that the children must have accumulated a number of ideas regarding each.

82. During this course of instruction, the only maps used are pictures—pictures of objects such as have been alluded to under the object-lesson, and pictures of scenes typical of countries. It is much to be wished that this latter kind of pictures were greatly more numerous and accessible for schools than they are. Thus the map of Arabia for the infant school should be a desert scene, exhibiting the general features of the desert and the sky, the caravan in whole, the camel as an animal, and the Arab himself in his usual costume. On the same principle should we have Egypt represented by its river and its pyramids; India by its rice-fields, its jungles with their fierce inhabitants, its mountain-passes with their elephant trains; China by its tea-plantations; Australia by its bush with the native and the kangaroo; the South Sea Islands by an assembly of natives on land or in their canoes; South America by its forests and its pampas; North America by its cotton-fields and its sugar-fields; the Indian territory by its prairies and buffaloes; the Esquimaux by his sledge

and dogs; Turkey by its mosque and worshipers; Spain by its wild mountain-pass and picturesque traveler; Switzerland by its jagged peaks and chamois-hunter; Italy and Greece by their ruins; Lapland by its reindeer and sledge; and, to come to our own country, Britain by its several scenes of the river crowded with shipping, of the busy factory, of pastoral and agricultural life, and of the hills of the north and west, with the sheep and the deer and the birds that occupy them.

83. The geography of the infant school is thus a series of object-lessons connected by a geographical link. It but prepares materials for the formal study of geography. It may be thought that the use of the map would facilitate the instruction; but it is quite immaterial whether the map be in the school at all or not. It is the business of the next stage of progress to "*localize*" all that has been learnt; which it does by going regularly over the map, and fixing down in position the countries which as yet are only names to the children. The utmost use of the map that should be made in the infant school is to go over with the elder infants, if time permit at the end of their course, on a physical map of the world distinctly outlined so as to show the features of districts, the general outline of what they have already learnt—showing the position of the different countries with whose names they are familiar, collecting all their knowledge regarding each, and explaining how the directions of north, south, east, and west, which they have already learned from observation of the sun's course, and which they have been taught to apply to the whole district about them over which their eye can reach, are exhibited on the map.*

6. *On Reading to the Children.*

84. Reading to the children is an important resource of the infant-school teacher. Considering the universality of this practice in infant family training, it is singular that it should have been so much neglected in school. The benefit of it seems clear and indisputable, in the one case as in the other. It is not for the sake of any instruction conveyed by it that we recommend this practice; the child receives his instruction otherwise. But two advantages flow from it, which are very apparent. The first is the stimulus which it gives the children to learn to read for themselves; and this is peculiar to reading *to* them as distinct from addressing them in words of our own. Let the teacher avowedly read before them; let him manage it so as to

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* For giving descriptive lessons on geography, the best helps are familiar accounts of places or of travels. See also, "*First Ideas of Geography,*" (Parker;) and "*Near Home*" and "*Far Off,*" (Hatchard.)

interest them in what he reads; let him cluster pleasant associations around the book; let him show them how *he* knows the stories only by reading, and how they must learn to read for themselves to know the stories recorded in books; let him, in a word, be thus constantly showing them, directly and indirectly, what a pleasant thing it is to be able to read, and there is certainly present to their minds a stimulus to exertion, a motive of a noble sort or the germ of one, the love of knowledge for its own sake. The second advantage is the culture it imparts to them—culture of the imagination and of the heart, for it is to these the reading should appeal. Direct address, or the relating of stories, may attain the same end; but, even if all teachers had the power of vivid description and picturesque narrative, which they have not, their resources are greatly extended by the use of the book. It presents them with an indefinite range of beautiful ideas, clothed in a fair and ample drapery of words. These have a permanent existence withal, and may be read again and again, affording to the child renewed pleasure at every repetition. Reading to the children, moreover, supposing it conducted in a way to interest them, accustoms them to close and self-sustaining attention.

85. The greatest obstacle to the practice of reading is one of a practical kind; the difficulty of procuring suitable books to read from. To set forth all the characteristics of a child's book would be to recapitulate much of what has been said in the former part of this treatise; but the teacher may be aided in his judgment by bearing the following cautions in mind: (1.) The subject of it must be a story, of which the interest centers distinctly on a person, or on some object actually or virtually personified. Science and history, therefore, however much simplified and garnished, are from their very nature unsuitable; the one being too abstract, the other too complex. (2.) The book must appeal to the imagination, and not merely to the reason or understanding. A cold didactic style, however clear, has no attractions for children. (3.) In speaking to the feelings the book must not assume too great a degree of self-consciousness in the children. Some otherwise suitable books are spoilt by a perpetual moralizing in set terms, and calling for reflections of a nature quite beyond the children to make; forgetting that the morality should be inwoven into the entire web of the narrative, and that they imbibe the impression of it in silently identifying themselves with a personage whose sentiments and actions are moral. (4.) In teaching morality the book must be careful to base it on a sure foundation. A false morality is a dangerous, yet very common, fault in a child's book. Virtue is very frequently associated with personal and temporal advantage, as when "getting

on in the world" is made the basis for inculcating truthfulness and honesty; and vice is frequently condemned on the ground of personal and temporal disadvantage alone. If virtue and vice be grounded on no deeper basis, the child's morality must in course of time be rudely shocked, and perhaps overthrown. Sometimes virtue and vice are founded on extreme cases of reward and punishment. Thus the boy who robs nests has often assigned to him the fate of falling from a tree into a river and being drowned; or the lying child goes on in a wicked course, till perhaps he comes to the gallows, or, like Ananias, is struck dead. Such consequences either rarely or never occur; and if no other penalties of vice are mentioned, the child will conclude from its never seeing these particular ones occur that there are none at all. (5.) The book should portray virtue for imitation rather than vice for avoidance. It is not prudent to anatomize vicious characters before the young, to trace their steps through their various schemes, to show up their designs; even for the purpose of denouncing them. As has been well remarked, "the infectious nature of vices is not destroyed by the reproach which may be attached to them." There is no use of giving children an experience of evil they had better be without. Let their innocence be preserved as long as it may; the knowledge of good and evil will come soon enough. Not the dark side of human nature, then, but the bright should be held up as the picture on which they should dwell. (6.) The subject of the book may either be level to their experience, or it may be remote from it; but the story should not be improbable. Robinson Crusoe and the Fairy Tales are equally admissible. "Once upon a time there was a troop of boys, notorious for all kinds of juvenile wickedness, engaged in a bird's nesting expedition. One, better than the rest, and associated with them then only by accident, was shocked at their profanity and cruelty. They lost their way in a wood and were benighted, and had to sleep under a tree. Presently noises were heard from the howling of the wild beasts. The good boy withdrew from his comrades; who were attacked and destroyed by the beasts. He escaped." This outline, taken from a book professing to be a child's book, shows, with other faults, the absurd improbabilities often set before children. (7.) The sentiment and style of the book should be unaffected. The flattering prettinesses sometimes addressed to the young with the view of getting them to listen, regarding either their personal appearance, or their actions and dispositions, can only breed conceit and affectation in return. And, in point of style, there is an *excess* of expression, a studied affectation and overdoing of childish words, which by no means add to the beauty or simplicity of the narrative.

86. Books for children fall under two classes; those whose subject-matter is real, and those in which it is fictitious. For the former kind many incidents in biography, and many biographical incidents in history, ought to be available. But much less is available than would at first sight appear; which is fully explained if we recollect that a large proportion of these incidents are connected with crime and punishment, and that it is not so much the quiet and unobtrusive virtues they record, as the more noisy and popular. Besides, biography and history are seldom or never written for children. On the whole, the teacher may make more use of these by studying the incidents himself and relating them to the class, simplified in style and somewhat idealized. There remain to be noticed those books which embody fictitious narrative. The utilitarian spirit has almost entirely banished from the present generation the old nursery tales; Cinderella, Aladdin, Sinbad, and the fairies are in disgrace. These and similar tales must and will be brought back again, being fitted for children in all time. They are much superior in respect of healthy influence to the generality of the books which for the present have superseded them. They are not professedly moral tales; they are tales of imagination and amusement; but neither are they immoral; of none of them can worse be said than that they leave morality where they found it. Whilst many of them, especially the fairy tales, have certainly a distinct moral influence, separating good from evil by a wide and impassable gulf, instead of mingling them up together as is now so commonly done. From these tales the teacher may make a selection suitable for his purpose. Stories about animals, and dialogues on familiar processes and things, are very attractive to children, and easily accessible. The fables of Æsop and such like have at all times been favorites with children, and have the advantage of having somewhat escaped the general ostracism of our day. Perhaps the fable is improved for the purposes of reading when neatly done into verse. Next might be named extracts from the works of writers like Miss Edgeworth, Mrs. Barbauld, Mrs. Lee, Maria Hack, Peter Parley, and others; till we come to tales like Sandford and Merton, and Robinson Crusoe. Extracts might also be made from some other established fictions—of course to be somewhat prepared by the teacher. And there is a large variety of children's papers in current publication, where he may find something to serve his purpose. But he should carefully peruse beforehand whatever he reads, to see that its sentiment be correct; even "religious tales," so called, should not be exempted from careful scrutiny with this view, as it is seldom they handle religious truth without distorting it or dislocating its parts.

87. Reading to children, with the view of stimulating the imagination, must be carefully regulated in amount. It is not prudent to let this faculty be dormant; but it is worse to over-excite it. Two or three weekly readings of about twenty minutes each are amply sufficient. But the teacher should watch the effect of his reading on the individual temperaments of the children. Some are more liable to be excited than others; who should accordingly be less frequently present at the reading.*

7. *On Reading and Spelling.*

88. Learning to read is unquestionably a *task* for the child. It should, therefore, not be seriously undertaken until he is fit to encounter a task; it must be carried on with a very careful regard to his strength; and it should be the object of his instructor to make him feel it to be a task as little as possible.

89. The proper view to take of the child learning to read is that he is learning to recognize in written forms the words with which he is already familiar *in speech*. We only surround him with difficulties if we regard his reading-book at this period as the means of extending his vocabulary. He acquires words in the conversational lessons, the natural vehicle for his acquiring them; his reading, let it be repeated, should be nothing more than the recognition of what is already familiar to him. If this be allowed, four things will follow. *First*, he should not begin to read from books till he has considerable acquaintance with spoken language; an acquaintance not only with all the fundamental words denoting relation, some of which occur in every sentence we utter, but with the names of all the familiar things about him, and with the most common qualities of things.

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*On this whole subject, see "*North British Review*," August, 1854; "*Necker*," vol. ii., book iv., chap. viii., and "*Home Education*," chap. x. A few books suitable for reading from to children may be mentioned:—

"*Evenings at Home.*"
Edgeworth's "*Early Lessons.*"
"*Winter Evenings, or Tales of Travelers,*" by Maria Hack.
Mrs. Lees' "*Anecdotes of Animals.*"
——— "*Familiar Natural History.*"
"*My own Treasury,*" by Mark Merriwell.
"*Peter Parley's Tales.*"
Bingley's "*Tales about Animals.*"
"*Lessons from the Animal World,*" (Society for Promoting Christian Knowledge.)
"*Life of a Bird,*" do.
"*The Nursery Tales.*"
Gammer Grethel's "*German Fairy Tales.*"
"*Granny's Wonderful Chair,*" by Frances Browne.
Æsop's "*Fables.*"
"*Woodland Rambles, or Conversations on Trees.*"
"*The Mine,*" by Rev. I. Taylor.
"*Arabian Nights.*"

This list may be largely increased by any teacher who will spend an hour in a bookseller's shop.

Secondly, the reading-lesson should consist of words which have a sense for him, and not only so, but of sentences which express complete thoughts; otherwise there is nothing for him to recognize. Lessons consisting of columns of single words, and much more of columns of syllables or parts of words, are not suitable. He should have in all his lessons the stimulus and pleasure which arise from the recognition by the eye of what is already known to his mind. *Thirdly*, the subjects of his reading-lessons should be things with which he is familiar from his observations. He will recognize most readily what he best understands and sympathizes with. *Fourthly*, his reading must be systematically interwoven with his speech. He should be engaged in a conversational lesson on the subject he has been reading about, which shall embody the words he has read. This will give a practical aspect to all he reads, and secure from the beginning the habit of reading with the understanding.*

90. For the purposes of the reading-lesson we may reckon two periods in infant-school attendance. The one is the preparatory period, that in which the child is being prepared for reading, rather than actually reading; the other is that in which reading from books is a systematic lesson. We may consider the middle of the fifth year as the boundary between the two; so that the first shall extend over a year at least. During this period the child is unfit to be subjected to tasks. He may be engaged with the first formal steps of reading, as we shall see; but the real preparation for his subsequent reading is the frequent conversational lesson, which develops his general intelligence and gives him some power over spoken language.

91. His preparatory lessons in reading should leave him in possession of all the fundamental words in written language, and of a number of the names of familiar things and qualities. The method of giving these lessons is still matter of opinion. The old way, and perhaps still after all the common way, is to teach the sounds of words apparently by associating these with the series of letter-names in the words; but this is to teach spelling rather than reading. It is evident that there is no natural association between the names of the letters composing a word, and the sound of the word. More recently it has been sought to gain the end by decomposing words according to the powers or sounds (and not the names) of the letters. This method is certainly capable of doing good service when properly used; but it has suffered somewhat from injudicious application. The

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* The reader will find the argument for carrying the child's understanding along with what he reads. and the manner of doing so, fully stated in Pilans' "*First Letter on the Principles of Elementary Teaching*," see "*Contributions to Cause of Education*," pp. 8, &c.

attempt to apply it universally to English words leads to an elaborateness and intricacy of system quite unsuitable for a class of infants; who do not learn reading, or any thing else, by rules. Finally, it has been proposed to teach the child to read without the aid of either the common or the phonic spelling; the words being simply viewed as pictures, with which the eye is to make itself familiar, *in whole*, as it does with other pictures.

92. Our first aim in teaching the child reading must be to make his path interesting; our second, to make it clear. To attain the first, we must awaken his curiosity, intelligence, and activity about the things of which he reads; to attain the second, we must give him whatever aid is to be derived from a rational classification of letters or of principles of sound. There is certainly a danger of trusting too exclusively to the second, from the very fact that it requires us more or less to construct a *system* of procedure for ourselves; it should be remembered, however, that whilst the aid derived from this source may seem to make the child's path clear, it does not necessarily make it interesting. That is secured only when we attain our first aim; which must, therefore be viewed as the higher of the two. But good teaching will keep both in view, and will strive to make them act harmoniously in support of each other. With these preliminary remarks, the order and method of the early lesson may now be suggested:—

93.—(1.) *The Alphabet.*—The names of the letters must be learned, not so much for any direct use they are of in learning to read, but just because they are the names of things that require frequently to be spoken about. And they may be acquired at the very beginning of the course, in a short time, and not only without causing the child any trouble, but with positive interest to him. By far the best way is by the use of letter-cards and slates. Whatever order the letters are taken in, let the card first be shown to the class, the form of the letter carefully traced and described, a drawing of it made on the blackboard, and from that by the children themselves on their own slates, and the name frequently repeated in course of the process: when they have all been gone over in this way, with the necessary revisals, let the teacher question them on the cards at random, adding an easy or perhaps amusing description of the forms, and let the children question each other with them in various ways as their ingenuity may suggest. Both the capitals and small letters may be learnt in this way.* Thus the lessons on the Alphabet are rather form-lessons than reading-lessons.

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* What Locke says of reading is interesting. He recommends that children be amused into a knowledge of letters and words; suggesting the use of an ivory ball with twenty-six sides,

94.—(2.) *Words of two Letters.*—These words should be learnt at once, having the sounds attached to their forms without any analysis into their separate letters. They are almost all irregular in sound, and do not admit of phonic analysis, even if it were desirable. The most convenient way of teaching them is to have them printed on separate cards like the letters, and a similar process gone through with them. The ingenuity of the children may be agreeably and profitably exercised in arranging them into sentences. For this purpose there should be a board or frame conveniently constructed, so as to admit of a row of sentences being placed on it. To these words of two letters many words should be added which consist of only two sounds, though of three letters, *e. g.*, *are*, *you*, *the*, &c.; and some of the most common of three sounds, *and*, *but*, *with*, *not*, and such like. If this apparatus can not be had, lesson-sheets are the best substitute; but an interest attaches to the use of such an apparatus which even lesson-sheets can not attain.

95.—(3.) When they come to read from the lesson-sheets, the class should be taught to perceive analogies of sound in words; that is to say, they should be exercised in phonic analysis. Thus the words *at*, *an*, *ox*, *all*, *in*, *it*, &c., are the roots of so many classes of words:—

at	an	all	ox	in	it
b-at	c-an	b-all	b-ox	f-in	b-it
c-at	f-an	c-all	f-ox	p-in	f-it
f-at	m-an	f-all		s-in	h-it
h-at	p-an	h-all			p-it
m-at	r-an	t-all			s-it
r-at	v-an	w-all			
s-at					

Whenever, therefore, a number of words from any such class occurs in a reading exercise—*e. g.*, *bat*, *cat*, *fat*—they should be compared, so that the *common* element *at* may be recognized, and also the *different* elements, to wit, the sounds attached to the letters *b*, *c*, and *f*. The number of classes of words thus formed may be largely increased

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and a letter on each, for the child to play with; or four dice, one for vowels, the rest for consonants to throw words with. "I know a person," says he, "who, by pasting on the six vowels on the six sides of a die, and the eighteen consonants on the sides of other three dice, has made this a play for his children, that he shall win who, at one cast, throws most words on these four dice; whereby his eldest son [yet a child] has played himself into spelling, with great eagerness, and without once having been chid for it, or forced to it."—"*Locke*," sects. 148-155. Compare these lines in Cowper's "*Conversation*:"—

> "As alphabets in ivory employ,
> Hour after hour, the yet unlettered boy,
> Sorting and puzzling, with a deal of glee,
> Those seeds of science called his A, B, C,
> So language," &c.

The idea of cheating the child into knowledge, however, is not quite sound, as going to confound work with play. In the infant school we must accustom the child to the idea of *work* but this work may quite well be made agreeable.

by taking as roots certain syllables which are not words, but from each of which a number of words arise by the prefixing of a consonant; *e. g.*,

-ot	-ug	-og	ill	-ad
c-ot	h-ug	b-og	b-ill	b-ad
h-ot	m-ug	d-og	h-ill	l-ad
l-ot	d-ug	h-og	m-ill	h-ad
n-ot	r-ug	f-og	t-ill	s-ad
p-ot	j-ug	l-og	k-ill	m-ad
r-ot		fr-og		
sh-ot				

and some others. These words, it must be understood, do not occur to the class, as they are here given, tabularly. The reading-lessons are constructed so as to present them in course, and they are selected from these for the purpose of analysis. Classes of which *can*, *cat*, *car*, *cap*, are types, having the common element first and the differing one at the end of the word, should also be examined. No great number of reading-lessons is required to put the children in possession of all the sounds of the letters, both consonants and vowels. When this is done, they have the key to reading in their hands; and they should be required systematically to use it henceforward.

96. No reading-book should be put into the hands of the class during these early lessons. This is a point of some importance; a class who are obliged to look individually at their books are thereby precluded from that mutual sympathy and common activity which is necessary to their success in any exercise. Lesson-sheets are an intermediate resource between the letter and word cards just described and the use of the reading-book. The cards and lesson-sheets, and the blackboard and their own slates, should be the sole materials for the instruction in reading of a class under four and a half years of age.

97. The teaching should be continued in the same spirit when the child takes the reading-book in hand. (1.) The phonic analysis should accompany each lesson, so that he may have every facility which the ear can afford to reading. And the teacher may observe that, whilst it would certainly be better to have the lessons arranged in the reading-book for this analysis, he is not altogether dependent on whether they are so or not. By using his blackboard he may give analogies of sound from every lesson. Irregular words can not be thus analyzed; their sounds should be at once told. (2.) The subject of every reading-lesson must be carried home to the child's understanding, so that it may be thoroughly lodged amongst the things which have an interest for him. And not only *at the time* should

teacher and pupils talk over the subject; it will be found very conducive to the end in view to recommend it to their attention over the evening so that they may collect any points of information at home about it which they can, and to recur to the subject on the morrow or soon after. (3.) If the moral aids to the reading-lesson be wanting, it will avail little to have those of an intellectual or mechanical sort. It is they alone that can supply motives to the child for exertion. Patience, kindliness of temper, good humor, keep the child pleased with itself, and with its teacher; which is essential to success. It is not indispensable that the child should be pushed on rapidly; but it is indispensable that he should like the work he is engaged in. Success in teaching the elements of reading seems often a very arbitrary thing; it is the moral qualities of the teacher which will be found to explain the results.

98. Reading includes not only the power of recognizing words, but of uttering their sounds correctly; and to this aspect of it great attention should be paid in the infant school. Children pick up the sounds of words by imitation, so that they are liable to error from two causes; either from having wrong models for imitation, or from their own imperfect imitation of their models. Under the first head are to be reckoned provincialisms of all sorts, but also deliberate mispronunciations encouraged in them by their parents under the notion of accommodating their speech to the wants of the children in point of simplicity. Under the second head we may set the confounding of similar or allied sounds by the vocal organs, or the imperfect formation of difficult sounds; the confounding of the liquids *l* and *r*, *s* and *th*, *t* and *k*, *ghr* and *r*, &c. Such impurities of articulation occur in every infant school; the pupil who exhibits them should be taken apart, and be made to observe the true sounds with the ear and the manner of their formation by the vocal organs with the eye, till he can utter them.

99. Another fault to be guarded against is indistinctness, arising either from a general feebleness of articulation, or from the suppression or slurring of some part of the sound of a word. This occurs most readily with the liquids, especially when two of these, or a liquid and a dental, follow each other in successive syllables. To correct this fault, if it have been already incurred, the pupil should be accustomed to full and strong utterance of all the parts of the word, even overdoing it for a time; reading sentences with a slight pause after each word, and words with a slight pause after each syllable. The most certain preventive of this fault in an infant school is the habit of distinct and forcible articulation in the teacher, in speaking as well

as reading. The value of this habit as a qualification in an infant-school teacher is for the most part not sufficiently estimated.

100. These are the faults to which infants are most liable in their reading. But the teacher must cultivate, so far as there is opportunity, all the recognized qualities of good reading; *e. g.*, proper time, which consists not only in stopping at the pauses, but in giving proper lengths to the vowel-sounds, as, *feel*, *sweet*, *good*, *dream*, *broad;* proper tone and pitch, which varies with each voice, but which is equally free from monotonous drawl or sing-song on the one hand, and from an irregular scream on the other.

101. The practice of simultaneous reading, moderately indulged in, may be attended with some good effects. *First*, in respect of time, it tends to correct both the extremes of quick and of slow reading by requiring conformity to one standard. *Secondly*, it tends to highten distinctness of utterance from the very effort needed to observe a measured time. One is always struck by the degree to which distinctness characterizes simultaneous utterance. *Thirdly*, it tends to modify any peculiarities of tone in individual readers; after a little practice, a harmony of intonation is almost always established. Too much, however, must not be expected from simultaneous reading; it tends to correct faults rather than to impart any positive excellence.

Spelling.

102. According to the common way reading is acquired through spelling. This relation should be reversed; spelling should be learned through reading. There should be no formal lesson on spelling given during the preparatory lessons on reading; and yet it would be a mistake to suppose that the child is not learning to spell during these, for spelling is a habit of the eye. The forms of words must be familiar to the eye before there can be any spelling. This then is the contribution which the early lessons in reading make to the child's progress in spelling—and it is a great one—that they stamp the images of the words on his mind, so that his eye recognizes them when it sees them, and, consequently, any deviation from their form.

103. The elder infants may be practiced in spelling; but not alone upon any prepared amount, nor in any one lesson in particular. It may be introduced as effectively in the object or form-lesson as in the reading-lesson. The exercise is designed to test their intimacy with the forms of the words that have come before them during their preparatory lessons in reading. It holds with spelling, as with reading, that the subject should be words forming a sense. Besides the names of things, sentences should be spelt through, by single words or by a

number of words together. Much is attained if the children can spell monosyllabic words with some facility when they leave the infant school.

104. As spelling is learnt, not for the purposes of spoken language, but for those of written, so spelling and writing must be conjoined as soon as practicable. The elder infants, who have previously had practice in writing on their slates the letters of the alphabet, and also the simplest kinds of words, may profitably be engaged in this rudimentary dictation-exercise, which serves the double end of teaching them both writing and spelling.

Grammar.

105. Grammar is sometimes taught in the infant school, but with little propriety. The teacher is often tempted to introduce the elements of this subject by seeing that the children seem to understand his familiar oral illustrations of noun, verb, and other parts of speech. But this understanding is not real; it can be turned to no practical account. Nothing whatever is gained by such an anticipation of future studies. The work has all to be done over again; and it occupies time which may be more profitably occupied with subjects of whose propriety there can be no dispute. Therefore it should be altogether deferred.

IV. RELIGIOUS INSTRUCTION.

106. "Our Father who art in heaven" should be the key-note of all the religious instruction conveyed in the infant school. In these words "is comprised all religious truth, as the plant is in the seed." God is our father; for He is the creator of ourselves and of all we see around us. He is our father; and, as a father, He provides lovingly and carefully for all His children. He is our father; and, when He sees His children in danger, He rescues us from it, having even sent into our world his Son, who is our elder brother, to save us from our greatest danger—the death of sin. He is our father; and so we have "the bright hope of eternal life, for why should a father give life to his children in order afterwards to slay them?"* He is *our* father, loving not one only, but all the members of His great family; who ought, therefore, to love one another. He is our father; and so should we give to Him all the love and reverence and obedience which are due to a father. He is our father *in heaven*, all-wise therefore, holy, and good; and so should we try to be like Him, and humbly seek to know and do His will. He is our father in heaven; and,

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* These quotations are from the work of Girard, already referred to for the manner in which it exhibits the whole course and spirit of religious instruction.

if we be dutiful children, He will take us to dwell with Himself in light forever and ever. "Our Father in heaven!" words worthy, from their inexhaustible depth of meaning, and fullness of obligation, to preface the model prayer which our Divine Teacher, the Son of our Father in heaven, hath given us!

107. This idea of "God our Father in heaven" must be made the center of the whole circle of doctrines we teach to children. The circle is wide; but in traversing it we must ever keep the center in our eye, as the sun which gives light and life to the whole. There is no difficulty in reaching the infant mind with doctrines like the following; which, so far from being received by it as strange, seem to it quite natural, from that "sense of God" which pervades its being: God the creator of the world and of man—God the preserver of all—His attributes of power, wisdom, eternity, unchangeableness, omniscience, omnipresence, holiness, truth, goodness—His Son, our Redeemer, Teacher, Example—the love, reverence, and obedience we owe Him—our sinfulness, and our duty to follow holiness—the Scriptures, His Word, which we should read—prayer—the reward of the good—the shortness of life—death—life in heaven with himself. This outline comprehends the substance of our religion; and is an amply sufficient basis on which to rear instruction in its practical duties.

108. Every thing depends on the *manner* in which we convey this instruction. In this we must have respect to the laws which regulate the whole instruction of the infant school. An abstract style of teaching is unsuitable, however clear our proofs or simple our phraseology. The "Catechism" is the exponent of this style of teaching, and can never, therefore, be the vehicle of effectual instruction by itself. Its forms of expression are mere words to the child.* We must use the conversational form of instruction, which allows us to present to the child whatever subjects and phases of subjects are fit for him. And these oral lessons must convey their teaching by means of "examples" or "illustrations." The doctrines of Scripture must be learned from the narrative of Scripture; and thus the two will be interwoven as they should be, each throwing light on the other. The complexion presented by the religious instruction of the infant school to a person viewing it as a whole is that of a series of stories, which, in the first instance, engage the imagination and feelings of the child from their

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* The teacher is often obliged, in deference to the wishes of parents, to use a catechism. There are one or two simple catechisms constructed for children. In teaching the catechism, there are but two alternatives, either to hear the children simply repeat it, or to connect the illustrative method of instruction with it. The mere explaining of its words and sequence conveys no ideas to the child.

own interest; but each of which suggests a doctrinal lesson, and the whole series of which is so arranged as to leave the child in possession of a connected scheme of the doctrines of the Bible. If this manner of teaching by story be followed, there is little danger of the instruction falling into the great error which most besets it, that of becoming too theological; which it does either when it tries to explain abstruser doctrines, which are as difficult for men to comprehend as for children, or when it uses technical theological terms instead of the language of every-day life. In stating the doctrines as they successively flow from the daily lesson, by far the best way is to express them in selected texts from Scripture, clear, short, and emphatic; which the children should commit to memory and often be made to repeat. It is well to have a series of these on the school-walls; but they are for the most part not sufficiently, often they are never, used.

109. The following scheme will exemplify the nature of the lessons; and the teacher may expand it indefinitely. It will be seen that the channels of instruction are various; being most commonly incidents from Old or New Testament history, sometimes the parables of our Lord, and sometimes mere descriptions addressed to the imagination. The same truth may be enforced by many lessons, for the sake of impressiveness, either in the same aspect or in different aspects:—

TRUTH TO BE LEARNED.	CHANNEL OF INSTRUCTION.		TEXTS.
God our Father....	Comparison with earthly Parent. Parable of Prodigal Son.		"Our Father who art in heaven." Ps. ciii. 13.
God the Creator....	of the world. " heavens. " man and beast.	Descriptive Lessons.	Gen. i. 1. Ps. xxxiii. 6.
God the Preserver..	Incidents in the life of Noah, Abraham, David, Daniel, Elijah, Peter, Christ.		Ps. xxxvi. 6. Ps. cxlv. 20.
God's Power......	Creation. Flood. Red Sea.	Miracles in life of Daniel, Peter, Christ.	Ps. clxvii. 5. Luke i. 37. Matt. viii. 27.
Omniscience.......	Incidents in life of Abraham, Moses, Elijah, Peter, Pharaoh, Herod.		Acts i. 24. 1 John iii. 3-20.
Omnipresence......	Jacob. Daniel. Christ.		Prov. xv. 13. Gen. xxviii. 16.
Holiness..........	Our first parents. Flood. Sodom.	Abraham, Moses, &c.	Ps. cxlv. 1 John i. v.
God our Redeemer in Christ. Christ our example, teacher, elder brother, intercessor, Saviour.........	Under this head may be introduced the chief incidents in the life of Christ, both parables and miracles.		Corresponding Texts.

Truth to be Learned.	Channel of Instruction.	Texts.
Our own sinfulness. Holiness alone from the Lord	Moses. Israelites. David. Peter.	Do.
Death	Any of the prominent characters in Scripture.	Do.
Resurrection	Christ's; Lazarus'.	
Future State of Life or Death	Parable of Lazarus. Transfiguration. Our Lord's parable of sheep and goats.	

By filling up this outline a little, a series of lessons for a year might easily be constructed. And this would suffice for the purposes of doctrinal instruction in the infant school; it would be better to revise in the second year than to extend the course. In this case, a higher style of treatment would be necessary; which might be varied by sometimes basing the instruction on Scripture emblems. These are not less excellent a field of instruction for the younger infants than for the elder, who can bring the knowledge of Scripture incidents already acquired to bear on their illustration.

110. The same method must be followed substantially in teaching moral and religious duty. The only difference is that in addition to the incidents of Scripture the teacher will find a large store of anecdotes in secular narrative serviceable as the ground-work of his instruction. He should be acquainted with many of these; indeed, he should be a reader of biography for the purpose. With each lesson a text of Scripture should be committed to memory. In this way should be enforced the whole range of virtues appropriate to children: obedience to parents, to teachers, respect to old age, truthfulness, honesty, justice, a forgiving spirit, kindness, kindness to animals, avoiding story-telling and nicknames, charity to the poor, patience, meekness, diligence, faithfulness to trust, redeeming the time, order, punctuality, economy, cleanliness, &c., &c. Many stories may be found for each of these, in addition to those which the teacher's imagination may construct from observing the children's conduct toward each other; so that this practical religious instruction is always going on, and yet is ever fresh.

111. Apart from the formal religious lesson, much instruction may be given incidentally, suggested either by what is observed in the course of the secular lessons, or by circumstances which occur in the daily intercourse of the school. Such instruction is very valuable; it is the test of the sincerity of the formal instruction—that which shows to the children that the teacher's mind habitually turns to the solemn truths he teaches in the religious lesson, and which exhibits the proper

use to make of these truths—that which alone gives a religious character to the whole work. It is that which inclines the child to try every thing by the light of God's law, and to take a Christian view of all His works. At the same time little can be said of it except that it should be given; the time and manner of giving it can be reduced to no rule. But the teacher who keeps in view the high moral ends of his teaching will never lack opportunities at which, without any abruptness or forcing, to drop the word in season into the willing ear of the child.

112. Whilst it will hold as a rule that in seeking to reach the mind with religious instruction, the same principles of teaching must be followed which are approved of in the secular lesson, it will always contribute to effectiveness of impression that the whole treatment should give indications of greater seriousness of manner than the ordinary school-work demands. A powerful influence will be exercised on the young mind if it is wont to see sacred subjects handled in a way which betokens the reverent recognition by teacher and pupils of a Power before whom both must bow. Any expedients in class-management, therefore, which interfere or seem to interfere with this, may well be dispensed with, even though experience recommends them for adoption in the secular lesson. The object of this is to set bounds about the religious lesson, that it may be indeed felt by all to be, what it is, a religious thing.

113. Specimens of the different kinds of lessons are subjoined by way of appendix. With reference to these, it may be observed that the subject-matter of the religious instruction is the same for the younger as for the elder infants. Their less advanced condition must be provided for in the manner of giving the instruction. The story, the object that forms the emblem, the features of the scene, in a word, whatever appeals to the observation must be dwelt upon, and the abstract instruction diminished in relative amount; the lesson itself should also be shorter, and the language more familiar.

Examples 1.

Christ's Power—Scripture Narrative—Matt. viii. 23–27.

Introduction.—Jesus' habit of going about preaching—traveled like other men—how travelers go? he would go mostly on foot, for he was poor—he lived much about the Sea of Galilee—often crossed it—how would he do so? where would he get the boat?

Scene described.—Describe the scene here—he and his disciples (name some) embarking—a little ship with a sail—the hills round the lake—how the gusts of wind sometimes come down—the storm raised—the large waves breaking over the vessel—what would they feel? why? and what would become of them?

Jesus.—What did they do at last? How they found Jesus—strange—was he in any danger? why not? what they thought he would do to them—they had seen him do strange things before. Ought they to have been afraid then? They should have trusted Him. What he told them.

The miracle.—What he did—his *word*—the wind ceased and the big waves fell, and there was a calm—danger removed. They had often seen a change, but none like this—what was strange here—what would they think? And other sailors who might be there who did not know him? Suppose the same case now.

Lessons.—What they said—what Jesus showed—could any man show such power? Jesus was God—and how good he was to his disciples, even though they were wrong—they would like to have such a friend.

Personal application.—Where is Jesus now? Powerful still, and good still, though we can not see him. Let us be his friends, and love him, and ask him to do us good; he sees us and hears us, and he will do it.

2.

114. God's goodness—Scripture Emblem—"The Lord is my Shepherd."

The emblem illustrated variously in its natural use.—What the shepherd does:—

Watches his sheep on the hill-sides, and in the fields—keeps away danger, either from men or wild animals.

Feeds them—seeks out the best pastures—the green pastures—beside the quiet streams—not amongst the rocks—or brings them food into the fields, when there is not grass for them.

What the shepherd does.—Leads them carefully from one place to another—how he gathers them from the hills or the field—watches them along the road, that none stray—and carries the young ones when they are tired.

Sometimes he is himself in danger—among the hills when he loses his way, or when snow comes—but he faces this danger for his sheep—for he is kind, and patient, and watchful.

The spiritual truth.—Who is the Shepherd spoken of here? Who can be the sheep? Christ says, "I am the good shepherd, and know my sheep, and am known of mine—the good shepherd giveth his life for the sheep." The kind of people that are his sheep? Those who love and obey him—how safe they must be with such a shepherd!

Personal application.—We need guidance in the world—for, like sheep, we are weak—let us love and follow Christ, that we may be his sheep, and that he may care for us.

Note.—Lessons on emblems very often fail from too great refinement in tracing the analogy; the truth is then apt to be lost sight of in verbal distinctions. We may illustrate the emblem in its natural use variously, as has been done above under three heads; but we are not to seek for as many corresponding heads in enforcing the fact symbolized in the emblem.*

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* The teacher may derive assistance in giving lessons on emblems from Stow's little work on "*Bible Emblems.*"

3.

115. Christ's love for children—Scripture precept—"Suffer little children," &c.

Scene described.—Describe the scene of Jesus preaching to the people—he often did so—one time he was preaching, and there was a crowd around him—men and women, and *children* too. And the people were pleased with his mild and loving words—they brought their children to hear him—why? What they must have thought of Christ. He had always blessed people and done good to them.

The children received.—Disciples were there, as they always were—stopped the people—thought their Master had no time. He *had* very much to do, but he did not turn away the little children. He saw what they were doing, and prevented them.

Jesus' words.—His words—"*Suffer*"—suppose you ask me to let you go out, then I allow you, or *suffer* you—suppose you are writing on your book, and I tell you not to do it, then I "*forbid*" you. What Christ said, then, was that his disciples were to let the mothers bring their children to him, and not to stop them.

Lessons.—Christ cares for children as well as for men—he was once a little child himself. If he loves them what should they do to him? What he wishes them to be? Kind and obedient, &c., as he was—and if they are so he will bless them. He has many children in heaven with himself.

4.

116. One of a series of lessons on the Lord's Prayer—"Thy kingdom come."

Introduction.—The terms *King*, *Kingdom*, and *Subjects*, illustrated correlatively.

God's kingdom.—*Kingdom* amongst men is a particular part of the earth, as England, France, &c. Kingdom of God not like this—ranges over the whole earth, and has men of every nation and clime—the Briton, the Frenchman, the African from the sandy deserts, the Laplander from his icy plains and hills, &c. (Draw out this picture somewhat.)

Its laws.—*Kingdom* amongst men governed by certain laws—sometimes good and sometimes bad. Christ Kingdom has laws too—tell me some of them. Here is one, "Thou shalt love the Lord thy God," &c.—here is another, "Live at peace with all men,"—and another, "Do justly, love mercy," &c.—and another, "If thy brother offend thee, forgive him," &c. These are good laws—we must try to keep them—how happy men would be if all kept them!

Its prospects.—*Kingdom* of God not yet spread over whole world—name (descriptively) some people who are yet without it—once it only included one people (the Jews,) in a little country—now it has spread over much of the world—it will spread every where—Christ's promise.

How it is to be spread.—How the *Kingdom* of God is to be spread—by men preaching to the nations who are not in it—missionaries—what we can do—support them with our money when we have any—many missionaries in different lands, and needing to be supported—something else we can all do—pray God to help the missionaries, and to make the heathen willing to listen to them—nothing can be done without this.

Lessons.—Repeat prayer for spread of the Gospel, § 119. When Christ was on earth, he taught us to pray—and one of the things he told us was, to pray thus: "Thy kingdom come"—what we should pray for frequently.*

5.

117. Moral lesson—on Truth.

Introduction.—Children, you have all seen the cherry-tree growing—on the house-wall, with its long branches like arms, tacked to the wall to keep them up —sometimes on the school-wall.

The cherry-tree.—A story of a cherry-tree. One was growing on the wall of school, and it had much fruit on it—perhaps a basketful of cherries. It belonged to the teacher, and though not in the play-ground, the children could reach some of the branches, and the cherries on them—would it be right in the children to touch them? why not? We should take nothing that is not our own. Well, they did not touch them.

The crime.—Two little boys came to school—once they passed the tree and stood to look at it—and, as they looked, they wished for a cherry—one asked the other to pull one, but he would not—then he told him to touch it, and see how nice and big it was, which he did—when he had it in his hand, the other pushed his arm, and the cherry came off—the little boy was much afraid, and cried—the bigger one picked it up and divided it, and told him to say nothing about it.

The discovery.—By-and-bye the teacher missed the cherry, and asked some of the children, but they could not tell him of it—he asked the bigger of the two boys, who hesitated, and at length blamed his companion—the little boy was going to be punished, but, when the teacher asked him, he told the whole truth.

The indirect lie.—Which of the two do you think should have been punished? why? The little boy actually broke it off, but he could not help it—he did not know what was coming—dishonesty of big boy, and then, when the master asked, he told a lie. It was a lie, even though he himself did not pull it. This shows us that we may tell a lie, when our words may state truly what took place. Children sometimes tell lies in this way.

Practical lessons.—What would the rest of the children think of the boy who told the lie? Would they love him? trust him? Would God be pleased? what does he wish us to do? He will bless the child who speaks truth. Let us always tell the truth, then, even though it may lead us into punishment. Our hearts will tell us we have done right, and all that know us will think well of us.

Point to, and have repeated, the Scripture maxim on truth. Repeat the prayer against lying, § 119.†

118. Exercises of devotion are the practical recognition of all we

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* For helps in giving religious instruction to infant classes, the teacher may with advantage consult the little works "*Peep of Day*," "*Line upon Line*," Draper's "*Stories from the Old and New Testaments*," "*Religious Instruction for Children*," by Miss Mayo; and works like Kitto's "*Daily Readings*," which supply materials for descriptive lessons.

† Since writing this lesson. I find that the incident related in this story happened in one of Mr. Wilderspin's schools. The reader may see it given at length in his "*Infant School System*," chap. x.; where he should turn to see the precise use to which the incident was put when it occurred.

learn regarding religion. Of course no infant school is opened or closed for the day without them; but perhaps more fruit might be reaped from them than is often attempted. They include two parts, sacred song and prayer. For the former, the children should learn a few hymns, or verses of hymns, suited to their capacity, after due explanation of their contents. To all, particular tunes should be attached; and, after they have been learnt, they should never be sung simply as singing exercises; a feeling of solemnity must attach to them. For the latter, it is common to use the Lord's Prayer, both in the morning and the afternoon, having it repeated simultaneously by the children in a becoming posture and manner. This is very proper; but it is desirable that other forms of prayer should be lodged in the children's minds; short, simple, and expressing each a single want. They should be called on to repeat these during the day's work, as occasion may suit, that they may both acquire the spirit of prayer, and become familiar with its proper elements. The following are offered as specimens for the elder infants; and the teacher may construct others for himself:—

119. MORNING PRAYER.—O God, thou hast been very good to me through the night. I have laid me down and slept, for Thou hast kept me. Keep me through this day. May I ever think "Thou, God, seest me." May I do what is right. May I obey my parents and teachers. May I be kind to my companions and to all. O God, help me to be good, as Jesus was. Amen.

EVENING PRAYER.—O God, Thou has kept me safely through this day; and I thank thee. O God, who lovest little children, Thou hast given me what I need: food to nourish me, a house to shelter me, and friends to love me. Help me to think of Thee more, and to do what Thou desirest me. Watch over me in my sleep, O God, for Jesus' sake. Amen.

A PRAYER FOR FRIENDS.—O my God, all good things come from Thee. Thou hast made me, and Thou keepest me by day and by night. Thou hast given me father and mother, and sister and brother, and friends, to love me and watch over me. O God, do Thou bless them. Give me a good heart that I may love them and be kind to them. And do Thou help us all to do Thy will, as Jesus did. Amen.

FOR A SICK CHILD.—O our heavenly Father, be kind to our sick companion. Thou hast done this: Thou knowest what is good for us all. Thy will be done. Be Thou, O God, near him, and give him rest. May he feel Thee beside him, and be at peace. Comfort his friends who are watching him. Restore him to us, if it please Thee, O God, for Jesus' sake. Amen.

FOR THE SPREAD OF THE GOSPEL.—O God, Thou hast given us thy Holy Word to tell us what is right, and we thank Thee. Thou hast sent Jesus, thy Son, to bless us. Thou hast told us of heaven where we shall dwell with Thee, if we are good. Thou hast told us to put away sin: O God help us! May all the children in the world soon hear of Thee, and of thy Son, and of heaven; so that they may put away sin. And then we shall all serve Thee together, for Thou art our Father in Heaven, who lovest us all. O God, hear us! O God, save us! O God, let all the world soon know Thee and thy Son! for Jesus' sake. Amen.

AGAINST LYING.—O God, Thou hatest lying lips. I have sometimes said that which was not true; make me sorry for it, and do Thou forgive me. Help me to tell the truth at all times, to my parents, my teachers, and my companions; for this is pleasing to Thee, O God. When I am tempted to tell a lie, may I remember that Thou art near me, and hearest what I say. Grant this, O God, for Jesus' sake. Amen.

It is well that the children should learn some prayers like these to say by themselves. In addition to this, they may often repeat after the teacher short ejaculatory prayers, in keeping with the subject of the lesson, consisting of a single sentence; without formally learning them. This will give them the habit of prayer, and the benefits which result from a prayerful frame of mind.

XIII. METHODS OF INSTRUCTION.—GENERAL PRINCIPLES.*

BY THOMAS MORRISON.

METHOD.

1. In strict propriety of language, the term method has reference to the particular mode in which the subject matter of education is developed and presented to the mind. It is merely the outward form, while instruction is the substance. It is the shell, while the instruction communicated is the kernel. But the kernel determines the form of the shell, not the shell that of the kernel. So it is in method—it must be determined by the object we aim at; it will take its complexion from the views we entertain in regard to what constitutes education. If we consider education as consisting in the communication of a certain number of facts, in loading the memory without cultivating the imagination or the reason, we need pay but little attention to the method by which we accomplish the desired result, provided we do reach it. But if, on the other hand, we regard education as the development of an inward life, as the evolving into active and harmonious exercise the various principles of our nature; and if we believe that these principles exhibit themselves in a determinate order and according to fixed general laws; then the method by which we can secure this development becomes of great importance. So long as we hold low and inadequate, or, it may be, entirely erroneous views in regard to the end of education, so long will we pay little attention to the methods we pursue; but, in proportion to the comprehensiveness and soundness of our notions regarding education, will be the care and anxiety exhibited to follow what reason and experience have proved to be the best methods of conducting the education of the young. And this question of method is not one of secondary importance, which the teacher may neglect or not according to his pleasure. He can only neglect it at his peril; for, properly put, the question resolves itself into this—how

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* "*Manual of School Management, for the use of Teachers, Students, and Pupil-Teachers.*" Glasgow: Hawthorn, p. 356. Contents.—I. Introduction. II. Teacher. III. School-house. IV. Registration. V. Classification. VI. Organization. VII. Discipline. VIII. Method. IX. Alphabet. X. Reading. XI. Examination. XII. Spelling. XIII. Writing. XIV. Arithmetic. XV. Grammar. XVI. Geography. XVII. History. XVIII. Form and Color. XIX. Singing. XX. Oral Lessons. XXI. Religious Knowledge.

can I best communicate instruction to a child so as best to secure the development of all those powers which the Creator has bestowed upon him ? How can I best train him to discharge his duties here, and to be prepared for the life to come? In all questions of method, accordingly, the first point to be settled is what is the end of education, and when this has been determined, there arises the second point demanding a solution—how can this end be most effectually secured? Method solves the second problem; but its solution depends upon our having a thorough understanding of the first. There are two methods by which a subject may be developed and presented to the mind—the Synthetic and the Analytic.

2. We do not propose to balance these two methods against each other, and to determine which of them ought to be employed in any given instance, for the judicious teacher will employ either according as he finds it suitable to the subject of instruction, to the proficiency of his pupils, and to the accomplishment of the end he has in view. Synthesis commences with principles and rises from these by regularly connected steps to the conclusion aimed at; it ascends from the particular to the general. It is the logical method of developing truth. We have admirable specimens of this method in the propositions of Euclid, where the reasoning, based on a few axioms or universally admitted truths, proceeds in regular logical sequence, until the conclusion sought is arrived at. Analysis, on the other hand, commences with the general and proceeds to the particular. The following illustration, taken from the writings of Dugald Stewart, may serve to give not only the probable historical origin but also the application of these two terms:—

"Suppose a knot of a very artificial construction to be put into my hands as an exercise for my ingenuity, and that I was required to investigate a rule, which others, as well as myself, might be able to follow in practice, for making knots of the same sort. If I were to proceed in this attempt according to the spirit of a geometrical Synthesis, I should have to try, one after another, all the various experiments which my fancy could devise, till I had, at last, hit upon the particular knot I was anxious to tie. Such a process, however, would evidently be so completely tentative, and its final success would after all, be so extremely doubtful, that common sense could not fail to suggest immediately the idea of tracing the knot through all the various complications of its progress, by cautiously undoing or unknitting each successive turn of the thread in a retrograde order, from the last to the first. After gaining this first step, were all the former complications restored again, by an inverse repetition of the same operations which I had performed in undoing them, an infallible rule would be obtained for solving the problem originally proposed; and at the same time, some address or dexterity, in the practice of the general method, probably gained, which would encourage me to undertake, upon future occasions, still more arduous tasks of a similar description."

Such then is the meaning of the two terms. Now although the Synthetic method be admirably adapted for presenting truth in a systematic form, it is questionable if it be in all cases, especially with the young, the best method of communicating truth. Children long for realities, for things, but by this method they are kept for a long period on the outskirts of the subject; the way has to be cleared; definitions have to be settled; and first principles laid down, on which to rear the intended structure. But all this preparatory work, essential in a scientific treatise on any given subject, is wearisome to children; they are unable to appreciate what is not near and tangible. Now analysis possesses this advantage that it takes things as they really exist, presents them in their every-day dress to the minds of children, and thus not only interests them by the exhibition of what is familiar to them, but exercises their ingenuity in leading them to discover their properties. If Synthesis be the logical method of developing truth, Analysis may be called the natural. Its work must precede that of synthesis. In childhood, and on to a considerably advanced state of boyhood, we know that the perceptive faculties are principally exercised, and that the logical do not manifest themselves until a later period. The exercise of the perceptive faculties, indeed, prepares the way for the due exercise of the logical. It is on the facts collected, and the observations made in childhood and boyhood, that the man reasons and compares. It would follow from this that with children we should most frequently employ the analytic method. We may give an illustration of these remarks by referring to two very opposite methods of teaching Geography. According to the synthetic method, a book of definition is put into the hands of the children. These definitions are carefully committed to memory, little care being taken to see that they are practically understood. When these definitions have been lodged in the memory, the child is gradually led on step by step, and ends exactly where he ought to have begun—with things around him. Now this method would be admirable, if our object were to give the child a strictly systematic view of the subject; indeed, by no other method could we accomplish this. But while we are thus laying down our definitions, and our first principles, there is danger of disgusting the child altogether. He can not see the far off object we have in view, and hence he wearies of our dry prelections, and ceases to take any particular interest in what has no immediate concern with him. But by the analytic method, we begin at home. The small hill, seen from the school window, with the stream running down its side, is made the basis of a lesson on the mountain and river systems. The child is at once interested. He knows the hill; he has forded the stream; he has played on the slopes of the one; and cast his tiny line into the other. The teacher, who commences in this method, will find that he has touched a sympathetic chord in the breasts of his scholars, and he will be enabled to lead them almost at will. Definitions can be wrought in as the lessons proceed, and after a time, when analysis has cleared the way, synthesis will step in and arrange into a beauteous whole the *disjecta membra*, which have hitherto floated on the surface of the mind. We shall have frequent occasion in the remaining chapters of this work to refer to the application of these two methods; and in the meantime we shall content ourselves with remarking that he who would adequately fulfill the duty of an instructor, would require to study carefully the human mind, and to mark and observe its mode of working, that he may thereby be enabled to suit his instruction to the circumstances of his scholars, and to wield at will either of the methods we have briefly described. "In nothing is the really able and skillful master more easily discriminated from the sciolist, and mere adherent to a method or system, than by his ability to interchange these forms at will, and, when one mode of presenting the illustration or statement of a new truth or fact to the mind, does not succeed in riveting attention and in securing its clear and vivid apprehension, to have recourse instantly and with perfect naturalness and ease to another and more suitable expedient. This is the true test of a skillful teacher; and, in the hands of such a man, the conduct of the processes of intellectual instruction will include the chief formal peculiarities of every rational method that has been propounded. Nothing can give this mastery of methods, but a complete and philosophical examination and a thoroughly intelligent appreciation of all, and to this lofty exercise it is most desirable that the aspiring teacher should immediately and strenuously address himself."*

3. While the analytic and synthetic methods are, strictly speaking, the only two methods that can be used in presenting truth to the mind, the practical application of them may and often does vary according to circumstances. Thus we may teach individually, simul-

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* Report by John Gibson, Esq.—"*Minutes of the Committee of Council on Education,*" 1848-49-50, vol. II., page 614.

taneously, or mutually by making the pupils instruct each other. It is to be observed, however, that these various plans have reference, not to the method by which truth is developed, but to the particular way of handling, if we may so term it, the pupils. Whether the teaching be individual, simultaneous, or mutual, it must proceed on one or other of the methods we have described in the preceding paragraph. In individual teaching, each pupil is brought immediately and directly in contact with the mind of the master, and may thus be expected to receive a more powerful and lasting impression than when he is addressed as one of many. It is not meant that, in individual teaching, each scholar is examined alone. The scholars, whether the instruction be individual or simultaneous, are arranged in classes. What we mean by individual teaching is that each child in any one class is singled out and made to perform his share of the work. Thus, is the lesson a reading one, each pupil in the class reads a certain portion; and so in regard to any particular lesson. This being premised, we say that it is only by individual teaching that the master can come into direct and immediate contact with each scholar, and that he can effectually secure that the prescribed task has been performed, or the necessary explanations received and understood. When we remember that education owes its chief value to the direct influence which a thoroughly equipped and well-furnished mind brings to bear on the young; that it is this collision of a fully developed and matured understanding with the crude embryo notions of the young, which kindles their intellectual life, and molds their plastic spirits; we can not fail to perceive that any plan which brings the master-mind of the school most closely in contact with the minds of the scholars is a plan which ought not to be neglected. Hence the teacher, who considers the high end of education, will constantly endeavor to be in living contact with the intellectual life of his scholars. He will endeavor always to have a connecting wire between himself and them, along which the pulsations of his own mind may travel, and beget similar pulsations in them. But not only is individual teaching thus valuable and important, it is the only safe mode of ascertaining that a prescribed task has been performed. Children, like others, are easily overlooked in a crowd; and when care is not taken to see that each child does most regularly and punctually do his duty, we throw temptations in his way which are sometimes too strong for his honesty. And in regard to explanations, of some rule suppose in arithmetic, the only mode of testing the extent to which the explanation has been clearly and thoroughly understood, is to single out successive individuals in the class and cause them to repeat what has been explained. In every case, in which any explanation of a general principle has been given, the teacher should satisfy himself of the reception of the information by questioning individuals. We shall have occasion, as we go on, to show more fully the application of these remarks. In the meantime we may repeat that in teaching, the more each child is individualized, the more closely the master deals with him alone, the greater likelihood will there be of his instruction taking effect, and springing up in the full luxuriance of a rich and fruitful harvest.

4. The term *simultaneous*, as employed in education, is sometimes used to denote that the children are taught in classes, and not one by one. We employ it here, in opposition to the term *individual*, to signify that the questions are addressed to the whole class indiscriminately, and that the whole class are invited and expected to answer. The advantages of such a plan, if skillfully and judiciously used, are, that it enables the master to accomplish a larger amount of work, and to develop more powerfully the sympathy of numbers, than is possible in individual teaching. But the dangers of such a plan in the hands of an unskillful or lazy teacher are manifold and obvious. An unskillful teacher is apt to deceive himself, and to do incalculable injury to many of his pupils, by failing to perceive that the answers to his questions, or the filling up of his ellipses, proceeds only from a few pupils, and that too generally from those who were acquainted with the subject, while those who were ignorant of it, and who, on that very account, ought to be the objects of his special care, remain ignorant still. The lazy teacher has recourse to the method to save himself from trouble, and to conceal from himself and others the general inefficiency of his teaching. Where the teaching is purely simultaneous there can be but little of that direct contact of mind with mind, which gives to education its highest value. The master is working, to a large extent, in the dark. He can not tell the peculiar idiosyncrasy of each child; he can not guage his mental caliber; and is thus deprived of his greatest lever as an educationist. In its own place simultaneous instruction is useful, but if used alone, it is utterly pernicious. Its proper sphere is when the master is elucidating general principles; when he is discussing some law or principle, suppose, in Geography; when he is explaining some rule in Arithmetic, or giving some general lesson in Science. For such purposes, simultaneous instruction is admirably adapted. So long as the master is engaged with the general, he may teach, not only successfully, but perhaps most successfully, on the simultaneous method, but the moment he leaves the general and comes to the particular, he must refrain from the simul-

taneous, and adopt the individual method. Thus, for example, in giving to a class an explanation of the rule of simple subtraction, the master may convey the general principle to his pupils simultaneously; indeed we believe that he will find this the true and safe method. But he will commit a sad mistake if he adhere to the simultaneous method when he comes to apply the rule to particular examples. As soon as he thus begins with particulars, he must individualize his scholars, in order to ascertain that each pupil has thoroughly grasped and mastered the explanation for himself. This illustration will tend to show the place and power of simultaneous instruction. One great end of education should be to educe the individuality of each child; this end ought never to be lost sight of, and it is because we dread the effect which simultaneous teaching would have on this end, that we would caution the young teacher to be sparing in the employment of it, but rather constantly to aim at the establishment of a living and life transfusing sympathy between himself and each of his pupils, by bringing himself daily and habitually in contact with their mental life.

5. Mutual Instruction has not produced the results which, at first, it seemed to promise. Nor is this to be wondered at, when we reflect that the fundamental idea of pure mutual teaching was false. The object aimed at by it was noble; and the founders of it were actuated by the most philanthropic motives. Children were growing up ignorant and untrained; and it was a truly laudable and praiseworthy enterprise to attempt to train them by the assistance of the more advanced scholars. And, moreover, at a time when money was profusely lavished on all schemes, except on education, the plan had the seeming advantage of educating many at a small expense. But, as we have said, the plan was based on a wrong principle. The true end of education was lost sight of, and the blind were set to lead the blind. Children, whose notions on all things were crude and ill-formed, were intrusted with the work of educating other children, whose mental attainments were almost on a level with those of their instructors. The mutual or monitorial system has, in consequence of this fundamental error, proved a failure. It has been superseded by the Pupil-Teacher System, which possesses this advantage over that which it has supplanted, that the agents it employs are more advanced in years, and it is to be expected in intelligence also; that they serve a regular apprenticeship, and pursue a systematic course of training. But even with these advantages, we would fain hope that the pupil-teacher system is but the prelude to something still better, and that the time is not far distant when, instead of raw lads being sent to operate upon

the young, every school will have its regularly trained master and its quota of trained assistants proportioned to the number of scholars in attendance. We had occasion in a previous chapter to point out the proper sphere of pupil-teachers in the school. We merely refer to the subject again, with the view of impressing on teachers the absolute necessity of intrusting to pupil-teachers only such kind of work as we have shown them to be capable of performing.

6. In questioning a class of children, there are certain points to which the young teacher would do well to attend. We have already stated the extent to which the simultaneous and individual methods of examination may be respectively employed; and we have shown that the latter is the safer and more effective of the two. But in individual examination, it is not necessary that the teacher commence with the pupil at the top of the class, and go regularly through. Such a plan, if the class is large, would have the effect of leaving the large majority of the scholars comparatively idle during those portions of the examination which did not immediately concern themselves. The consequence would be that those who were not being directly examined would be apt to become careless and inattentive, and thus distract the master's attention. In order to obviate these disadvantages, the master should first state the question to the whole class; and, after allowing sufficient time for reflection, he should then single out some scholar indiscriminately to give the answer. In this way, the attention of all is kept up, and the examination proceeds quietly and unostentatiously, it may be, but very effectively. Each child is liable to be called upon to answer any or every question, and he is thus kept from being indifferent. The time spent in conducting an examination in the mode we have described is not greater than in the ordinary way. But even were it greater, the plan, if adopted, will amply repay any loss of time, for what seems to be lost in time is compensated for by the entireness and thoroughness of the work. A judicious master will, by a single glance of the eye, know whom to select to give the answer, and his power over the whole class will be as great as over each unit of the class. Such a method of questioning combined with occasional simultaneous questions, will prevent the spirits of the children from flagging, and will sustain the interest unbroken to the close of the examination. Every question should be stated clearly, succinctly, and with strict avoidance of all ambiguity in the expression of it. Any thing approaching to technical terms should be seduously guarded against, until it is known that the terms are clearly understood by the children. General abstract terms are useful, only when their meaning is clearly perceived by the mind.

When once their true signification has been thoroughly grasped, such terms are of the highest utility, inasmuch as they save much needless repetition. But they are only of value when understood. The teacher, before making use of such terms, will accordingly see to it that the scholars have formed a clear conception of their meaning. Thus, for example, to one who can interpret them, the terms employed in natural history possess a deep significance, and a few such will often convey to a naturalist a more accurate notion of the thing signified than whole pages of verbose description. But the ability to repeat these terms is not co-extensive with the ability to interpret them; and it is quite within the bounds of possibility that children may be taught to repeat all the classifications of a Cuvier, without having the slightest understanding of their meaning. In putting questions, accordingly, and in accepting answers, the teacher should take particular care to use or to receive no word, the meaning of which is not understood. The question should be graduated to suit the capacity of the scholar. There should be no excuse either for no answer or for a wrong one. Every child should be expected to answer; and if in any case his inability to answer arises from his not understanding the question put, the teacher should at once throw it into a different form, or, if it be too complex, he should resolve it into its constituent parts. Every expedient should be had recourse to in order to secure an answer from each child, and not merely to secure an answer, but the correct one. Such a plan develops the confidence of the child in his own powers, and when we have taught a boy that he can do a thing, we have put him on the way of actually doing it. The child should be required to give a complete answer to every question. The mere substance of the answer should not be accepted —the matter of it is very important, but, in some respects, the form of it is equally so. The answer should contain a completely developed proposition; for, in such a case, the teacher can turn the examination on any lesson into one of the best, because a practical, means of teaching correct speaking. Dry grammatical rules will never by themselves teach the correct method of speaking or writing the English language. It is the reduction of these rules to practice that is useful, and every lesson should form an exercise in the correct use of language. The pupil should also be encouraged to give the answer in his own terms, and it will frequently be found that these terms, although perhaps not strictly pure, are yet remarkably expressive. A double benefit results from such a plan; an opportunity is furnished of giving the correct expression for the thing signified, and at the same time the master learns whether the pupil has acquired the knowledge of the thing itself, or whether his knowledge is confined to the mere name. In some respects, the mere knowledge of the name is utterly valueless, compared with the idea which the name represents, and it is of the utmost consequence to distinguish accurately how far the child's knowledge really extends; and this can be best done by allowing him to give utterance to his views in his own words. But, as we have remarked, for all terms which are merely provincial, the teacher ought to substitute the word which is the real sign of the idea. Questions should be so framed as not to contain the answer, and, in putting them, the voice should be so modulated as not to suggest it. If these things are not attended to, the question serves no good purpose—it is a waste of time. In history, a question of the following kind is of no value whatever—"Was not Elizabeth of England contemporary with Mary Queen of Scots?" There can be no doubt as to the answer, and the question is useless. Neither should questions, requiring for answer the monosyllables yes or no, be introduced, except as leading questions, when they furnish the basis of a continued examination. The great end of this kind of examination is to stimulate thought, not to call forth mere smartness; and hence the examination should be conducted calmly, with great deliberation, and with a due regard to the ability of the particular pupil. Young teachers are very apt to confound rapid questioning and answers with sure and effective teaching, and to imagine that the largest amount of work is performed, where there is most excitement and physical movements. We would take it upon us to caution all young teachers against being misled by this too current belief, for, in many instances, the very reverse would be nearer the truth. Some minds may be so formed as *to think* with great rapidity, but the vast majority are not so constituted; and, as the true teacher must rest satisfied with nothing short of the evolution of thought, he must learn carefully to discriminate between the semblance and the reality of actual thinking.

7. Much of the information communicated by the teacher to the children will be given in oral lessons. Almost all the branches of education should be taught, to a large extent, orally, and this holds especially true of lessons on science, natural history, and such like subjects. Text-books on such branches are comparatively of little service, and those at present in use are so miserably adapted to their purpose that they frequently do more mischief than good. But however excellent the text-book may be, the master's own mind must, after all, be the chief storehouse whence the information of the pupils is derived. Now in conducting these oral lessons, when the object is

not to examine the pupils on the amount of knowledge which they possess, but to consolidate and extend that knowledge, it is evident that direct questioning will not, by itself, be sufficient. Direct questioning, whether conducted individually or simultaneously, forms an admirable method of taking stock of the pupil's acquirements, but it is not equally well adapted to lead the pupil on to new regions of thought, and new fields of observation. For it will be observed, that in oral instruction the teacher assumes that the child is ignorant of the facts which he is about to state, and of the conclusions which he intends to deduce from these facts. No doubt, a question may be of such a suggestive nature, as to lead the pupil to divine almost intuitively the answer, and may in this way become the means of leading him on from one point to another, until an entirely new subject has been brought before him. But, in general, it will be found that such suggestions can be far more effectively given by introducing to the pupil's notice a certain portion of the statement, and, when he has thus obtained the requisite hint, by allowing him to complete the idea. This prevents the lesson from degenerating into a mere lecture, which, as an educational power, is utterly valueless where children are concerned. The teacher is introducing his pupils into a new untried field. He will do them little good if he walk rapidly through, discoursing eloquently it may be, on its wonders and beauties; but he may arouse their attention, secure their interest, and thus set them a thinking, if he moves slowly forward, giving a hint here, and a hint there, but allowing the pupils to discover for themselves the objects of interest which lie in their path. Here, we believe, lies the great value of *Ellipses* in education, and, if properly conducted, their power is undoubtedly great. But the young teacher would require to guard sedulously against the abuse of them. When by their assistance he has led his pupils one decided step onward, he must pause and ascertain by direct question to what extent the point arrived at has been understood. For it is quite possible that a great fund of information may have been communicated, and that the children may have filled in the ellipses properly, but this is no valid proof that the lesson as a whole has been received, and thoroughly mastered by the children. To ascertain this, they must be subjected to a rigorous cross-examination, which, however, need only embrace the leading points in the lesson, for if these are clearly understood, it is an almost infallible sign that the whole bearings of the subject have been comprehended. Ellipses are thus mainly valuable in communicating information, but the working in of that information into the very texture of the mind must be accomplished by questioning, or, as in the case of arithmetic, by requiring the pupil actually to reduce to practice the information he has received. Questions and Ellipses are thus not the opposites but the complements of each other. Each has its own place in education, and each may be made to subserve the most important ends. But it is only when the two go hand in hand that good will result; if either (and especially if ellipses, being by nature the weaker power,) is allowed to usurp an undue influence, the instruction will, to the extent of that usurpation, be unsatisfactory. And we may remark, in conclusion, as was remarked in a former paragraph, that he will most efficiently fulfill the high ends of his office, who can employ these methods at will, and who can have recourse to either when he finds it most suitable to reach and to arrest the minds of his pupils.

EXAMINATION.

8. The information which children derive, even from the most carefully prepared series of school books, ought to bear, in every rightly conducted school, a very small proportion to that which they obtain from the well-stored mind of the master. Not only is this the case, even the information contained in the books will not take its full effect on their minds, unless it has been thoroughly wrought in by close and rigid examination. In order, therefore, to secure that the lessons are understood, the master must, from the youngest class to the highest, institute a searching analysis of what has been read. In the younger classes, this examination will be mainly confined to questions which exercise the observing faculties and the simplest ideas of relation; but as the pupils advance in years and in understanding, the analysis will embrace questions tending to cultivate the reasoning powers and imagination, and at a still later period those of abstraction and generalization. We do not mean that the teacher should frame his questions with the special view of cultivating these faculties in their due order; we believe this to be impossible; for in every lesson there will necessarily be questions which appeal more or less to all these various faculties. The teacher, however, who is acquainted with the order in which these faculties develop themselves, will, from this knowledge, derive many valuable rules to guide him in examining a class on any given lesson. Thus, for example, with a class of very young children, in whose lesson the names of the sun and moon occurred, he would never once dream of attempting to explain the way in which these bodies are related to each other; or, should the seasons be mentioned, he would confine himself to a few general questions on the characteristics of each, without entering on an explanation of the causes which produce them. In questioning a class

upon the subject matter of a lesson, the teacher should employ every opportunity of deepening, extending, and consolidating the knowledge of the subject which the children may have acquired from the reading-book or from other sources. In order to illustrate our meaning, we shall give one or two examples of lessons suited to different stages of advancement, with brief notes of examination on each.

9. Examples for examination.

Junior Classes.

Example 1.—The rat sat on a mat. The fat cat ran to the rat. The rat ran in-to the box? Can the cat go in-to the box? No, the fat cat can not go in-to the box.

On the assumption that the children are familiar with the forms of the words, and can read the lesson with tolerable fluency, we would proceed to question them on its meaning. And here we would remark that, even at this early stage, it is desirable to lead the children to analyze the sentences. We need say nothing to them of the term analysis—it will be learned in time enough.

Examination.

What two animals does your lesson speak about? Have you ever seen a rat? A cat? Which is larger? Which is stronger? Where was the rat sitting? What was it doing on the mat? What was sitting on the mat? What is a mat? Where do you see it? What is its use? If a little boy got his shoes dirted what should he do before going into the house? The mat is used for—*wiping the shoes.* The rat sat on—*a mat.* Was that its own place? Where should it have been? As it was sitting on the mat who saw it? What kind of cat was it? And what did the fat cat do? The fat cat ran—*to the rat.* (Describe the running—show how the cat would sit and watch, and then bound forward. This will amuse and interest the children, and keep them fresh for the remainder of the examination.) Do you think the rat would wait on the mat? What would it do? It would—*run away*, run away to—*its hole.* Where did it run? What is a box? What made of? How would it get into the box? What must have been in the box? You see then the rat ran into—*the box* through—*a hole.* Did the cat go into the box? Why not? The hole would not let in—*the cat*, but it let in—*the rat.* Would the cat go away from the box? What would it do? It would—*watch* beside the—*box*, to see if the rat—*would come out*, &c.

Many other questions might be put—anecdotes told, and such interest thrown into the lesson that the children would be sorry when it was over. We have thrown in a few ellipses in the foregoing examination—the words in *italics* being supposed to be filled in by the children.

Example 2.—Look at the Lion. He is a fierce, cruel beast. He is very strong and very terrible. He has strong limbs; a long, flowing, shaggy mane; and a long tail. His roar is very fearful, and very terrible; it is like thunder. The lion is often named the king of beasts. The lion is sly; he is a beast of the cat kind, and all beasts of the cat kind are sly and cunning. He creeps behind a bush, or a tree, then crouches down and springs suddenly on his prey, &c.

Such a lesson as this should be accompanied if possible with a drawing of the animal described; for words, however clear and explicit, will convey to the minds of children but a faint idea of the form and shape of an animal which they have never seen. The first sentence presupposes that the children have a picture before them. In lessons of this kind, the two main points to be attended to are—that the children know the meaning of the terms used, and then their application in the particular passage. We shall endeavor to indicate these points in the following sketch.

Examination.

What have you been reading about? Well here is a picture of the lion. Have any of you ever seen one? What kind of beast is he? He is—*fierce and cruel.* What is the meaning of fierce? of cruel? (If no answer is given, take some illustration to assist them in bringing out the meaning. In all probability, they have a very good conception of the meaning, but want words to express it. Contrast is often useful in assisting them in this respect; thus, Would you call the sheep a fierce and cruel beast? What would you call it?—*mild and gentle.* Now is the lion like the sheep? He is not—*mild and gentle.*) If I were going to describe a boy to you, so that you would know him when you saw him—would I say that he was fierce and cruel? I would tell you what he—*was like.* I might tell you what kind of clothes he—*had on,* &c., but I would not say that he was—*fierce and cruel.* Now then what would you use these words for? (to tell his disposition, or his character.) When I say that the lion is fierce and cruel, what then do I describe? (his character.) (In this way the right application of these terms is acquired, and the best possible foundation laid for the correct use of language.) Does your lesson say any thing else about the character of the lion? (Such a question will at once show if your meaning in the preceding examination has been understood. If the children answer, that he is sly and cunning, you may rest assured that they have followed you.) Yes, he is—*sly.* Like what other animals? What is a mark of all animals of the cat kind? They are—*sly and cunning.* How do you know that he is sly and cunning? Why is he said to creep? Have you ever seen an animal of the same kind do the same thing? What animal? When? When he gets behind a tree what does he do?

(Show this by an appropriate action.) How long will he crouch? and when some animal comes up, what does the lion do? How does he spring? Why suddenly? What on? &c.

In the same manner the terms employed to describe the form, the parts, and the roar of the lion may be gone over; and if this be done with life, with appropriate action, and with apt illustrations, the children will follow the course of the examination with intense interest. We have seen two hundred little children so excited by a lesson of this sort, graphically given, that they would scarcely have been surprised had they seen the lion spring on its prey, so real had the master made the picture.

Under this same division we shall give a short poetical extract, and make one or two observations on the mode in which it should be treated.

Example 3.

Hark the mower's whistling blade,
How steadily he mows;
The grass is heaped, the daisies fade,
All scattered as he goes.

So Time, as with a stern delight
'Mid human havoc towers,
And sweeps resistless in his might
Kingdoms as grass and flowers.

The flowers of life may bloom and fade,
But He, in whom I trust,
Though cold, and in my grave-clothes laid,
Can raise me from the dust.

There are in this passage three distinct parts—the natural picture, drawn from a very common incident—the analogy between this picture and time—and the contrast between the fading flowers, and the wreck of kingdoms and the Immortal who looks on; and these three must be gone over in their order. Notice first the picture—What is a mower? what does he do? why is his blade called a *whistling blade?* Note the second line. What is meant by mowing *steadily?* Show the effect—the grass is heaped—can not resist—it falls before the blade. Note also the particular term "daisies,"—it makes the picture more graphic. The poet does not content himself with the somewhat general term *grass*, but he singles out the "daisies," why? They are beautiful—objects of interest to children, and this one word vivifies the whole picture—although beautiful, they must fall before the whistling blade. Similar instances of the use of particular terms may be noticed, *e. g.* our Saviour's allusions to the "lilies," the "ravens," &c. Milton's description of Satan,—"Sat like a cormorant." Notice secondly the analogy. What is compared to the mower? Why is Time so compared? What does the mower do? and what Time? (*mows*, *sweeps*.) What sound does the blade give? What clause in the second part corresponds to *whistling* (as with a stern delight.) The blade seems to—*whistle*, so Time seems to feel —*a stern delight.* The blade mows among—*grass and daisies*, so Time towers among—*human havoc.* Note the exact application of *human*, that it means—*havoc produced among men*, and not—*havoc caused by men.* How does the mower move? (steadily,) how does Time? (resistless in his might.) Bring out also the effects produced by each, and show how Time has swept kingdoms, by instancing some. Notice thirdly the contrast. I—any one, who saw and observed the things mentioned in the two previous stanzas—will not thus perish—I may be cold, and laid in grave-clothes, but still He, in whom I trust, can raise me. Compare Job, xix. 25, 26. John, xi. 25, 26. With a class somewhat advanced compare also such a passage as the following:—

> 'Tis night, and the landscape is lovely no more;
> I mourn, but, ye woodlands, I mourn not for you;
> For morn is approaching, your charms to restore,
> Perfumed with fresh fragrance, and glittering with dew;
> Nor yet for the ravage of winter I mourn,
> Kind nature the embryo blossom will save,
> But when shall spring visit the mouldering urn!
> O, when shall it dawn on the night of the grave!

Compare also the whole of the eighth paraphrase.

Senior Classes.

10. In examining the senior classes, the same *kind* of questions should be put as in examining the junior; the main difference in the questions should be one of *degree.* Both in prose and in poetical extracts the terms employed must be carefully explained, correct definitions given, the figurative use of words pointed out, and the aim and scope of the whole passage laid bare by a skillful analysis of all its parts. The information contained in the passage should be largely supplemented by suggestions and ellipses on the part of the master, and, as far as possible, each lesson should be complete in itself. Whatever be the particular aspect of a subject which the lesson treats of, that aspect should be a whole. If the lesson, for example, regards a leaf, the form, structure, and use of leaves should be brought out, and their relation to the trees on which they grow. In this way, each part of any given subject will fall into its proper place, and the mind will acquire the important habit of grouping things together by natural principles of association, and of calling

them up when necessary. The derivation and formation of words, the changes which they have undergone both in form and meaning, and their composition, should be noticed and illustrated. In poetical extracts, the figures and the imagery employed should be dwelt upon, the use and application of them should be shown by examples, and care taken to foster the habit of a rigid adherence to the correct use of language. In advanced classes, the reasoning of the author should be examined; the premises on which he builds noticed, and the conclusions drawn from these premises tested. In this way, fallacies in argument may be detected, and the best possible foundation laid for a thorough study of logic; and all this without having recourse to the mystical jargon with which professed treatises on logic too frequently perplex the young student. It need scarcely be remarked that no false sentiment should pass unchallenged, come from whatever source it may; the morbid sentimentalism which disfigures too much of our literature should be sternly exposed, and every effort made to enlist the sympathies and the affections of the young on the side of what is true and honest and of good report. We can not give full illustrations of all these remarks; we shall content ourselves with one or two meager outlines.

Example 1.—The mariner's compass is a wonderful though a simple instrument. It consists of nothing more than a needle and a card; and yet it enables the mariner to traverse the pathless sea with perfect confidence. The needle, being converted into a magnet, or loadstone, which is easily done—and being balanced on a point above the center of the card—always points to the north: and the sailor has therefore only to examine the card, on which the cardinal points, east, west, north, and south, are marked, to know in what direction he is steering.*

In conducting an examination on such a passage as this, (which we have selected on account of its succinctness,) it would be well to have either a real compass, or a representation of it. If, however, the teacher has neither, he can easily have recourse to the blackboard, which will enable him to give the pupils a tolerably correct idea of the instrument. The leading points to be brought out are the two parts of the instrument, the relation in which they stand to each other, and the use which the sailor makes of it. It consists of a needle and a card—an ordinary needle would not suit—why?—it must point to the north, which a common needle does not do. Hence what must be done to the needle? How is this done? (the lesson does not state this, the teacher must, therefore, bring it out by illustration and suggestion.) We have now the needle prepared. What else does the lesson say is necessary? What kind of card? What is written on it? But will it do to lay the needle on the card? Why not? What must be done? Thus we train out the two parts, and their relation to each other. Then what does the sailor do? How does he know his direction? (This can be illustrated on the black-board.) More particularly—what is the mariner's compass said to be? why is it called a *compass?* Why the *mariner's compass?* What is a mariner? What other name is given to him in the passage? He is called a mariner because—*he is engaged on the sea*, and a sailor because—*he sails on the sea.* How do you know that the compass is a *simple instrument?* that it is a *wonderful instrument?* Why is the sea called *pathless?* What do you mean by a *path?* (In this way the exact meaning of the word is brought out, and the children can, in future, apply it correctly.) The derivation of some of the words might also be pointed out, but of this more anon.

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* M'Culloch's "*Series*," p. 43.

Example 2.—It has been already mentioned, that water exposed to the air is gradually converted into a state of vapor, which, on account of its specific levity, ascends into the atmosphere. This vapor presents itself in various forms. When the air holds it in solution, it is invisible, just as salt dissolved in water is invisible; but when the vapor condenses, the watery particles become visible either in the form of clouds and mists suspended in the atmosphere, or in that of rain, dew, snow, and hail, falling to the ground.*

Substance of lesson (to be given by the pupils in answer to questions by the teacher.)

1. Water exposed to the air is gradually converted into vapor.
2. On account of its lightness the vapor ascends into the atmosphere, where
3. It assumes different forms, which are visible or invisible.
(*a*) Invisible when the air holds it in solution.
(*b*) Visible when it is condensed so as to form clouds, rain, dew, &c.

The above may be obtained from the pupils in something like the following manner:—What follows on water being exposed to the air? Is this vapor the same weight, lighter, or heavier, than the air? What is the consequence? What forms does it then assume? When is it invisible? What is meant by the air holding it in solution? Can you give an illustration of that meaning? Because the clouds and mists are easily moved about by the currents of the air, what are they said to be? When does the vapor assume the form of clouds and mists? When does it assume the form of rain, snow, hail and dew? Such an examination as the above will enable the teacher to form an idea as to how much of the lesson is understood by the pupils; and if time permit, the facts of a previous lesson on evaporation may be revised and used in explanation of the statements made in this lesson. This will train the pupils to use the information they possess, and to realize the truth, "knowledge is power." The analysis may be thus continued. How is water converted into vapor? How does the air convert the water into vapor? What is the name given to this process? On what does the amount of evaporation depend? &c.

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* M'Culloch's "*Course of Reading*," p. 249.

Example 3.—While a plant differs from an animal in exhibiting no signs of perception or voluntary motion, and in possessing no stomach to serve as a receptacle for its food, there exists between them a close analogy both of parts and functions. The stem and branches act as a frame-work or skeleton for the support and protection of the parts necessary to the life of the individual. The root serves the purpose of a stomach by imbibing nutritious juices from the soil, and thus supplying the plant with materials for its growth. The sap or circulating fluid, composed of water, holding in solution saline, extractive, mucilaginous, saccharine, and other soluble substances, corresponds in its office to the blood of animals; and in its passage through the leaves, which may be termed the lungs of a plant, it is fully exposed to the agency of light and air, and experiences a change by which it is more completely adapted to the wants of the vegetable economy.*

Subject of lesson. Analogy between a plant and an animal. Before noticing the analogy, it is necessary to dispose of the points of difference.

AN ANIMAL	A PLANT
has	*has not*
Perception,	Perception,
Voluntary Motion,	Voluntary Motion,
A Receptacle for food.	A Receptacle for food.

What is meant by perception? If I prick you with a pin what do you feel? What sensation have you? Now, do you think a plant feels pain like you? It has neither the sensation nor the perception of *pain*. What is meant by motion? What by voluntary motion? Did you ever see a plant moving? (Some may answer yes, which will furnish an opportunity of bringing out clearly the meaning of the term *voluntary motion*.) In the same way notice the difference in respect of stomach. An animal then differs from a plant, in that the former has—*perception*, *voluntary motion*, and a *receptacle for its food;* while the latter—*has not*.

2. Analogy both of parts and functions.

1st.—Of parts.

(*a*) An animal has a frame-work or skeleton; a plant has also a frame-work in the stem and branches.

(*b*) An animal has lungs; a plant has also lungs in the shape of leaves.

2d.—Of Functions.

(*a*) In both, the frame-work supports and protects the parts necessary to the life of the individual.

(*b*) In the plant, the root serves the same purpose as the stomach in the animal.

(*c*) The sap of the plant corresponds in its office to the blood of animals.

(*d*) As the blood of animals is exposed to the action of the air in its passage through the lungs, so the sap of plants in its passage through the leaves.

(*e*) The sap thus exposed is more completely adapted to the wants of the vegetable, as the blood is to the wants of the animal economy.

Each of these parts must be clearly elucidated, in order that the children may have a thorough understanding of the lesson. We need not, however, enter into details, as we have already indicated the mode of procedure.

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* M'Culloch's "*Course of Reading*," p. 126.

Example 4.

The sky is changed!—and such a change! Oh night,
The storm, and darkness, ye are wondrous strong,
Yet lovely in your strength, as is the light
Of a dark eye in woman! Far along,
From peak to peak, the rattling crags among,
Leaps the live thunder! Not from one lone cloud,
But every mountain now hath found a tongue,
And Jura answers, through her misty shroud,
Back to the joyous Alps, who call to her aloud!

And this is in the night:—Most glorious night!
Thou wert not sent for slumber! let me be
A sharer in thy fierce and far delight,—
A portion of the tempest and of thee!
How the lit lake shines, a phosphoric sea,
And the big rain comes dancing to the earth!
And now again 'tis black—and now, the glee
Of the loud hills shakes with its mountain mirth,
As if they did rejoice o'er a young earthquake's birth.

If the previous stanzas have been read, the force of the exclamation at the beginning of the passage will be at once apparent. It may be noticed that such contrasts are frequent in Byron's poetry. Some of his finest passages depend upon the effect produced by the introduction of opposites. Thus in his description of "Waterloo," he passes from the brilliant scenes of a ball-room to the bloody field of battle. In "The siege of Corinth," he draws a beautiful picture of the sea sleeping calmly in the moonlight, and immediately thereafter introduces us to a scene so awfully horrible as to make the blood run cold. Various questions may be put on the passage—we can only give a specimen of a few. What two figures of speech are employed in the first stanza? (apostrophe and personification.) Where is the apostrophe? Give other examples of the same figure. Point out the particular words which indicate the personification, (leaps, answers, joyous, &c.) What two qualities does the poet associate with the night, and storm and darkness? Are these qualities necessarily connected? Taking the common ideas regarding these qualities, do we generally conjoin them? What illustration does the poet use to enforce his meaning? Point out the terms in the illustration which corresponds to the terms in the thing illustrated. Show the propriety of the epithet *live* as applied to thunder. What idea does the sound of the words "the rattling crags among, leaps the live thunder" seem intended to convey? Give other instances where the sound is made to echo the sense, as in Milton's famous line "On their hinges grate harsh thunder," &c. What are the mountains represented as doing? What particular mountains are singled out? Notice the effect produced by thus as it were localizing the description. "Every mountain" is a somewhat vague term, but by introducing "Jura" and the "Alps," the poet gives his description a local habitation, and the mind realizes it far more easily than if he had employed only general terms. Notice the graphic position in which the poet, in imagination, puts these mountains; the Alps, as if in sympathy with his own spirit, rejoicing in the storm, and calling aloud to Jura, which re-echoes the shout. Why is Jura said to be covered with a shroud? &c. The second stanza should be gone over in the same manner.

Example 5.

I dare do all that may become a man;
Who dares do more is none.

A passage so full of meaning as this is, should be thoroughly impressed by illustrations and examples, on the mind of youth. It teaches, in few but significant words, what constitutes real manliness, regarding which boys are apt to entertain such erroneous ideas. The teacher should first point out the full force of the expression "that may become a man," by showing clearly man's position, duty and destiny, as revealed in the word of God. A catalogue of those things which become a man is given in Philippians iv. 8. The teacher should refer to this passage, and show that he only who dares do such things in spite of scorn, mockery or obloquy, deserves the name of man; aud he who dares not do these things is no man.

Example 6.

That which in *mean* men we entitle—patience,
Is pale cold cowardice in *noble* breasts.

The nature of the morality taught in this passage will depend on the meaning we attach to the words—*mean* and *noble*. The teacher should point out the ambiguity which lurks under them. By referring to the context, it will be seen that the words really signify—*low born* and *high born*. In this sense it will be easy to show that the statement is erroneous; that patience is becoming the *noble* as well as the *mean;* that one rule of conduct is applicable, in God's sight, to both. If the words are employed, which, according to present usage, they may be, to denominate respectively the class, who, from want of spirit, tamely submit to any injury, and the class who, like Paul before the Roman governor, stand upon their undoubted rights, then the lesson taught is good, and may be impressed strongly on children.

11. An acquaintance with the sources from which our language is derived is valuable on many accounts; indeed no one can be said to have received a thorough English education who is ignorant of the history and the development of our language. Frequently it happens that a knowledge of the root of a word supplies the key to its meaning, although it can not be denied that as frequently the literal meaning conveys but an imperfect idea of its present application. Thus the literal meaning of *import* would not impart any thing like a full picture of the signification of the word. And not only is this the case, it is also to be remembered that words have, in the course of centuries, entirely changed their meaning, and are now used in senses very different from what they were originally, *e. g.*, the words *villain*, *pagan*. Again, in many words the meaning, as determined by the root, still remains; but an additional meaning has been analogically superadded, *e. g.*, in the words *apprehend*, *apprehension*, *sentence*. Now in all these cases the mere knowledge of the root will not serve any high end in education, and we would be inclined to condemn, as a piece of what is popularly termed clap-trap, those exhibitions, still too common, in which children repeat with great volubility all the derivatives of the more common roots, without having the faintest idea of their true signification. Derivation is generally taught synthetically; a list of roots, prefixes and affixes, is placed before the child, and he is compelled to commit to memory the whole, with the representative words to the bargain. This is reversing the natural order. Derivation ought to be taught analytically. The child should not be troubled, at least until considerably advanced, with any ugly, unmeaning string of roots. And yet derivation should and may be taught from an early period, and in the following manner. In the ordinary reading books, when a compound word, such as *tea-pot*, occurs, the attention of the pupils should be turned to it, and it should be pointed out that the word consists of two separate significant words. They might be asked to give other words formed in the same way, such as *wind-mill*, *house-top*, *&c.* In a similar manner secondary words should be dealt with. Such words as *runner*, *courser*, *tanner*, *&c.*, would furnish opportunities of analysis, and it could be easily shown that the termination *er* produced a change on the original word, and that the change of signification was well nigh uniform. So also with such words as *wisdom*, *kingdom*. Adjectives and adverbs should be treated in a similar way, and it would be no difficult thing to show by such words as *kingly*, *manly*, *royally*, *manfully*, that the termination *ly* changed nouns into adjectives, and adjectives into adverbs. We need not multiply examples, the principle

is evident, and the only one which accords with the true idea of education. In regard to the roots or stems of words, the same method should be adopted. In such words as *missionary*, *permission*, *demission*, *proceed*, *recede*, *succeed*, *&c.*, the children would at once perceive a common element. The meaning of this common part should then be given, and when this has been done, it should be shown that in all the words this meaning may be traced. After exercises of the sort we have described have familiarized the pupils with the leading roots, a list of prefixes, stems, and affixes, arranged systematically, should be put into their hands, and may be committed to memory, although in reality this is of very little consequence. It is of the utmost importance, however, in going over this list, and in forming words from it, to notice clearly the literal meaning, and also the present application of the word. To make sure that the children thoroughly understand the correct use of the term, they should be made to construct short sentences in which it occurs. Thus, when the meaning of *import* has been explained, a sentence should be asked for, such as, *England imports cotton from America.* We need only remark further that in the advanced classes, the history of words should be traced; the changes in meaning which they have undergone should be used as illustrative of corresponding changes in the sentiments, the habits or the religion of the people. On this aspect of the subject we may refer the reader to the admirable little work on "*The Study of Words*," by Dean Trench.

THE TRIPARTITE SYSTEM OF ORGANIZATION.

PROF. MOSELEY, one of her Majesty's Inspectors of Schools, gives the following account of the Tripartite System of School Organization, which is a modification of the plan first tried by Mr. Oliphant, in the Sessional School at Edinburgh.

> The first, and essential element of it, is the separate room for oral instruction, the devotion of the labors of the head-master chiefly to this object, (relieved occasionally by the second-master or pupil-teacher, with whom he exchanges duties,) and the throwing of the children in three great divisions successively into that room, for an hour twice a day, for the purpose of that instruction. Every other element of the plan admits of modification, but not that. If that feature of it be sacrificed, then the most important results which I contemplate from it, will, in a great measure, I conceive, be lost. It is no longer the plan which I recommend, or one from which I anticipate any very decided advantage.
>
> Whilst in all that requires the independent exercise of judgment and discretion in the business of instruction—in all that involves the sanctions of religion,

and considerations of moral responsibility, and thus needs to be presented to the mind of a child with the gravity and the authority which can only be brought to it by the mind of an adult teacher; and in all that concerns the development of the judgment and intelligence of the child—the direct interference of the master in its education is necessary to any useful result, as well in reference to the youngest child in the school as to the oldest; I am not prepared to deny that there are certain elements in the business of a school, which, being essentially mechanical in their nature, may, under due supervision and with proper limitations, be conducted on the principle of mutual instruction. Reading, for instance, may, I conceive, as to its mechanical elements, and with a view to that individual instruction and mechanical practice which it requires, be taught by the aid of monitors—as young even as some of those to whom the whole business of instruction is intrusted in our existing schools—provided that each reading lesson so given is checked by a subsequent examination of the master; and that the subdivisions of children placed at any time under the instruction of a single monitor, do not exceed eight, or at the most ten, in number.

I will suppose the subjects of instruction in elementary schools to admit of the following division:—

1. Those which are properly the subjects of oral instruction.
2. Reading.
3. Writing, slate arithmetic, drawing, committing to memory—being silent occupations.

For these three subjects, I suppose separate localities to be assigned. A gallery and a separate room for oral instruction. Parallel desks arranged in groups for writing, &c. An open area or floor for the subdivisions receiving instruction in reading.

Corresponding to these three distinct branches of instruction, I propose that the children be formed into three equal divisions, and that, when the morning devotions and the Bible lesson have terminated, each division passes to one of these localities, and receives instruction in those elements of knowledge which are proper to that locality.

Calling the divisions, for instance, I., II., and III.; division I., will take its place in the gallery for oral instruction; division II., at the desks for writing, &c.; and division III., (in subdivisions of from 6 to 10,) upon the floor of the school-room, for instruction in reading, (or in the room set apart for that purpose, with a gallery, &c., if it be proposed to adopt the simultaneous method of teaching reading.) Now it will be observed, that there are three hours in the morning, and, in summer, three hours in the afternoon devoted to school business. I suppose the above distribution of the school to remain during the first of these hours. At the expiration of that hour, a change takes place; that division which was in the gallery receiving oral instruction, passes to the desks, for practice in writing, &c.; that which was at the desks, to the floor of the school-room for reading; and that which was reading, to the gallery, for examination by the head-master in that reading lesson in which the whole division has been receiving the instruction of the monitors. This arrangement continues during the second hour; a similar change takes place at the commencement of the third; and so each division passes in its turn (in the course of the morning,) under the personal examination and oral instruction of the master; each is occupied during an hour in writing, slate arithmetic, &c.; and an hour is devoted by each to mechanical instruction in reading.

If the localities appropriated to, 1. Oral Instruction; 2. Slate Arithmetic; 3. Reading, be represented respectively by the letters A, B, C, and the three equal divisions of the school by the symbols I., II., III., the following time-table will represent compendiously the arrangements which I have described in detail:—

Hours.	I.	II.	III.
9 to 10	A	B	C
10 to 11	B	C	A
11 to 12	C	A	B

It will be observed, that the first or lowest division of the school is occupied during the first hour in reading; that it is then placed under oral instruction, which oral instruction, conducted by the head-master, is supposed to be founded (where that is practicable,) upon the reading lesson which the children have just been practicing, and which always commences with an examination as to the extent to which they have acquired the power to read it mechanically. For the results of this examination, the monitors who have been employed in teaching it are supposed to be held, in some degree, responsible. The teaching of that lesson to each child in his subdivision, being understood to be assigned to the monitor as his task; the due performance of which is afterwards to be inquired into in every case by the master.

In carrying out this plan, I propose that the boys and girls should, in the morning, be taught together; I claim, however, the services both of the master and the mistress then, as well as in the afternoon. For schools whose average attendance of boys and girls does not exceed 100 this will be enough. For every additional 25 children, there should be a pupil-teacher; and if the number exceed 200, one of these at least should be replaced by an assistant-master.

The station of the mistress is to be the reading-room; that of the pupil-teacher the desks, where writing and slate-arithmetic are taught; and that of the master the gallery, where oral instruction is given.

I propose, then, in respect to the hours of morning instruction, that the teaching of reading shall be intrusted to the mistress.

That for the purpose of this instruction, each of the three divisions of the school shall, during the hour when it occupies the reading-room, be formed into two sections, one being composed of as many of those children who are most backward in their reading as the mistress can herself adequately instruct in a single class; the other section being broken up into subsections, each composed of not more than eight children, and each placed in charge of a monitor.

The whole of the children of each of the great divisions is, when in the reading-room, to be occupied in reading the same lesson; and the time-table of the schools to provide that, when the hour allotted to it in the reading-room is expired, it shall be transferred to the gallery for oral instruction by the head-master, such oral instruction always commencing with an examination upon the reading lesson which has preceded—first, as to the ability of the children to read the lesson accurately; secondly, as to their intelligence of the subject-matter of it. If the reading lessons be properly selected, they will frequently serve as the foundation of that oral instruction of the master which is to follow this examination. In those schools to which no infant school is annexed, some of the children will probably be so young, and so imperfectly instructed in reading, as to render it expedient that they should remain in the reading-room during the period assigned for instruction of the lowest division in writing, and during one of the two periods allotted every day to the oral instruction of that division. This is a modification of the plan in respect to which the master will exercise his discretion.

The writing, practice of arithmetic, drawing, &c., will be placed under the supervision of the pupil-teacher or assistant-master, who will nevertheless relieve the head-master, changing places with him from time to time, and taking up his task of oral instruction; but not at any other times, or in respect to any other subjects, than such as are prescribed in the school routine, and have received the sanction of the School Committee. It is not, however, to be supposed that the master to whom the duty of oral instruction is assigned is constantly to be occupied in *talking*. His duties include examination and the hearing of lessons; and from time to time he will pause, and require the children to write down their recollections of the lesson he has been giving.

In the afternoon I propose that the girls should be taught to sew by the mistress, in the room appropriated in the morning to reading; and that the boys be formed into three divisions, as in the morning, and similarly occupied; the two divisions employed in oral instruction and writing occupying one of the remaining rooms, and the other being appropriated to reading, under the supervision of the assistant-master or pupil-teacher. The number of children composing each division being greatly less in the afternoon than in the morning, I anticipate that the supervision of that division which is occupied in writing, under the care of an elder child, or monitor, will not interfere materially with the important task of oral instruction, with which he is more particularly charged, more especially as that task is not supposed to be incessantly plied, but alternated with periods when the children under oral instruction may be writing out exercises on their slates, or working examples in arithmetic, the principles of which branch of science I suppose to be taught as an important department of oral instruction. The duties of the master will be relieved by those of the assistant-master or pupil-teacher in the afternoon as in the morning, and under the same circumstances.

It is a characteristic feature of this arrangement, and that which I have principally in view in recommending it, that it brings each individual child, from the least to the greatest, every day, during one-third of its school-hours, under the personal instruction of the master; that it places the master under the most favorable circumstances which I can devise for conveying that instruction to him; that it compels him to take up the study of the child from the moment when it first enters the school, and that it entirely takes away from the duties of the master that voluntary and irresponsible character which they are made to assume, by a system which provides for the carrying out of the entire business of instruction without his intervention; that it emancipates the children from the monotonous control of the monitors, and from the noise of the reading-room, during two-thirds of the day; that when the children are under monitorial instruction, it places them in groups, under the charge of each monitor, less in number by one-half than the classes usually assigned to the charge of a monitor, all day long, by the existing system; that for the *great* business of the elementary school, *Reading*, its most tedious and difficult task, it provides, moreover, the services of an adult teacher (the mistress,) who is supposed to employ assistance of monitors only in respect to those children whom she is unable to teach herself; that each reading lesson so given it followed by an examination, as to the success with which it has been given, by the master; that whilst the services of the mistress are rendered available in respect to that branch which, however important, does not (under the circumstances,) suppose in the teacher that higher degree of attainment and general ability for the management of a school, which are so rarely found united in a mistress—it secures, nevertheless, to the girls (to whom it is at least as necessary as the boys) the highest order of instruction which the school will supply; that in respect to existing schools, it provides for this, without dispensing with the services of the mistress, or altering the present arrangements as to her salary; that, in respect to new schools, it enables the master to employ the services of his wife in the business of the school, under circumstances (with reference especially to that higher standard of education at which we aim,) in which they would not otherwise be available; that it economizes the labors of the pupil-teacher, making, by the union of the two schools, one such teacher sufficient where two would, if the schools were separated, be necessary.

Lastly, that, providing for those technical branches of instruction which are not only valuable in themselves, but necessary to secure that public opinion of the parents favorable to the school, on which its success must after all depend, it provides further for that oral instruction of a more general kind, which aims at results less tangible, indeed, but the highest contemplated in education, and the most valuable; that extends the benefits of this form of instruction from the highest to the meanest and lowest child, and that it brings to it the master spirit of the school, and all the sanctions with which the authority of the highest office can surround it; that in respect to his own individual part in the labor of teaching, it does not leave the master to the influence of no other motive than his own sense of duty, or that desire for excellence which it is so difficult to preserve in a remote and unobserved school, subject as it is to the antagonism of those prejudices which, lingering in the public mind, too frequently interdict all sympathy in his labors; but that it contemplates a system of instruction in which his labors shall constitute an integral part, and prescribes the subjects which he shall teach himself, and the times when he shall teach them.

XIV. ORAL LESSONS ON COMMON THINGS.

BY THOMAS MORRISON.*

Rector of the Free Church Training College, Glasgow.

1. ORAL INSTRUCTION ought to be employed in dealing with the principles of all the ordinary branches of school education. Text-books are mainly valuable, in that they present a connected and systematic view of any subject, and supply the various definitions and technical terms employed in connection with it. But no text-book can furnish information in principles, so clear and so conclusive as to supersede the necessity of oral instruction on the part of the master. In treating of such branches as arithmetic, geography, or grammar, by far the most valuable part of the information—that, namely, which relates to the fundamental principles on which these sciences are based—to be given successfully, must be given orally by the master. But, in addition to these regularly stereotyped branches of education, much useful and highly important information may and should be communicated to children in school—information which no series of text-books can adequately supply. We refer to incidental oral lessons upon various portions of natural history, natural science, and upon what has been termed in these modern days "common things." The books used in school too generally deal with dry abstract subjects—while the little world in which the child lives, his home—his food—his garments—the air he breathes—the various operations which he sees going on around him—are carefully and most religiously shut out from school.

2. In all these oral lessons, the knowledge acquired should be directed to practical purposes. In this way the child becomes acquainted with the science of common things. The mere knowledge of principles, whether in the region of natural or moral things, does not imply the power of directing that knowledge to practical use. It is quite a possible, nay it is, unfortunately, a too common thing, to find a person whose creed is thoroughly orthodox, and who has a clear intellectual discernment of the relation of the various doctrines which constitute that creed, but whose practice is sadly at variance with his belief. So it is in natural things. Our education is too formal. It is too much shackled with absurd conventionalities. We give our

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* Abridged from "*Manual of School Management.*"

pupils much knowledge, but little wisdom. We supply abstract principles, but no directions as to their application. Now it must be borne in mind that we do not speak here of the attempt which some hair-brained visionaries have made, to convert the school into a general workshop, where the boys are taught shoemaking, tailoring, and other trades; and where girls are trained to bake and wash, and to perform such like domestic operations. We have already lifted up our voice in solemn protest against the introduction of such things into the elementary school. Much of our education has been, no doubt, an unreal, a visionary thing; much of it has been concerned with words, and nothing more, and, perhaps, it was natural, when a reaction set in against this state of matters, that many should err in the other extreme, and deny the use of knowledge of any kind which could not be immediately applied to practical purposes. We make no reference here to such attempts as these; but, while we deprecate with all our might such misapplications of the child's school life, we would insist on giving the child as much information as possible upon the application of those principles which we present to him. Thus, in dealing with the atmosphere, while we would give the child a knowledge of those ingredients which compose it, and of the laws which regulate it when in motion, we would also give him information upon the connection which subsists between health and a constant supply of fresh air—of the means whereby a dwelling-house, or other building, may be safely and effectively ventilated—of the cause and the evil results of draughts, &c.; so, when speaking of dwelling-houses, we would not only unfold the nature of the material employed in constructing the edifice, but also the necessity of having a dry foundation—how this might be obtained—the evils consequent upon over crowding, &c. We would not only teach the child the philosophy of the art of swimming, but that it is unsafe to bathe in all states of the body, &c. These illustrations will serve to show what we mean by the science of common things. The advantages arising from such lessons are obvious. The child associates the abstract principles of science with the common affairs of every-day life, and finds illustrations of them in objects the most unlikely. His interest is thus continually kept up, and, when he leaves school and enters on the actual battle of life, instead of performing his work blindly and in virtue merely of imitation, he does it with the intelligence of a man who has learned to trace the relations which subsist between theory and practice. We are satisfied that, were lessons of this kind more common, they would create an intelligence that would result in the greatest benefits to the body politic; and that such things as smoke-nuisances—over-crowding nuisances—and many other foul and loathsome nuisances—would not be tolerated, no not for a day. At present, our laboring classes, more particularly in country districts, do their work mechanically, with little more intelligence than is shown by the dumb animals whose services they employ. Their school education enabled them to read but very imperfectly, and soon after their life of toil began, the little technical learning they had acquired became obsolete through want of practice, and so they settled down into that sad and most melancholy position in which nothing interests them which does not appeal to their senses. We need not wonder at the alarming prevalence of vice among our rural population. The lessons we are now treating of would, to a certain extent, serve to counteract the tendency which uneducated natures have to gravitate to the earthly and sensual. By opening up to them some of the wonders which meet in the most common objects, by training them to reflect on the principles involved in the most simple operations, and by guiding them to make, from a knowledge of principles, improvements in the mode of conducting these operations, we supply them with the means whereby their attention and their curiosity may be kept ever on the alert, and their minds exercised upon what is both useful and profitable.

ORAL LESSONS.—FIRST STAGE.

3. It is evident that, if young children are to receive any instruction at all, it must be given orally. For a very considerable time after entering school, they are unable to employ the art of reading in such a way as to derive much benefit from what they read. If their minds, accordingly, are to be exercised at all, if their young faculties are to be trained and developed, something more must be done than merely teach them the arbitrary signs of sounds. To keep a poor child for some months, or, it may be, years, poring over the A, B, C, and its combinations, is the sure and certain way to make him a dunce of the first water. In fact it would appear eminently natural to delay introducing the child to the acqusition of written signs, until he has been some time in school. The method which nature suggests, is to follow out the line of education which the child has instinctively pursued before entering school. He has been exercising his perceptive faculties on the various objects which surround him; he has been examining their properties and qualities, and acquiring a marvelously large stock of ideas, and of language in which to give expression to them. By means of oral lessons the teacher can take him up at the exact point at which he has arrived at the time when

his school life begins, and carry him gradually forward from one degree of knowledge to another. At first, accordingly, the attention of the child should be directed, in such lessons, to those properties of the object which he can discover by his senses. For this purpose the object must not only be described to him in words, but he must also see it, handle it, smell it, taste it, or hear it, as the case may be. Every one has observed how natural it is for children to touch those objects which interest them. So strong is this desire, that in galleries of art, in museums and such-like places, it is found necessary to caution visitors against touching any of the articles. This tendency is the exhibition of Nature's method of communicating information to the young or the unlearned. The teacher should fall in with this instinct of children, and allow them to exercise their senses upon the objects which he selects as the subjects of his early lessons. In this way they will acquire correct conceptions of them.

4. After a time, and when lessons of the kind described in last paragraph have given the master a basis on which to work, he should select, as subjects of lesson, objects which do not come within the sphere of the personal observation of the children. There are many objects in the world of nature which the children can never personally examine, but which ought not on that account to be excluded from their notice. Personal examination is a mighty help to clearness of conception, but, even without this personal examination, children may be trained to form very correct notions of many things of which they may never be able to take any direct sensible cognizance. The actual presence of an object in school is not necessarily of the essence of an oral lesson upon that object. Thus, the children may never have had the opportunity of seeing a lion, tiger, or elephant; and the master will find it rather difficult to obtain actual specimens of these animals, whether alive or dead, to take with him to school. What then? Is he to give no lessons upon such animals? Nay, verily; he may, by the use of proper methods, convey to the pupils a very accurate and, on the whole, distinct conception of the shape, appearance, and habits of these creatures. By means of a good drawing he can convey to the mind the general idea of the appearance of the animals, and, by comparing the unknown animal with one that is known, he may give distinctness to the general conception. Thus, the tiger resembles the cat, but is much larger. It is as high as some known animal—or as this (pointing to some part of the wall,) it is longer than—— about as long as——, &c. Anecdotes, illustrative of his character and strength, will still further serve to give distinctness to their conceptions, and, although the children might not be able, from

the description thus given, to draw an exact likeness of the tiger (supposing them capable of drawing,) they would still have some correct ideas of the animal, and the name would thus be associated with a distinct mental picture. To confine these oral lessons to familiar objects would be to limit most unnecessarily and prejudicially their sphere of usefulness.

5. One important end served by these lessons is that, by means of them, the child is acquiring a command of words, which will be of essential service in his future career. Even before entering school, the child has made considerable progress in the acquisition of words, many of which may not be over pure, although remarkably expressive. In acquiring these words, the child has almost invariably proceeded, unknown to himself, on the principle of obtaining first a knowledge of the thing, and then, as necessity arose for it, of the name. This furnishes to the teacher the true method whereby he ought to teach language in connection with these lessons. If the children have an expression of their own for the idea, it ought to be accepted; but, if the term is local or provincial, this ought to be pointed out, and the correct word given. If, on the other hand, the children require to be taught a new term, this should not be done until the idea, of which the term is a sign, has been clearly and thoroughly pictured out. This simple principle, in practice so often lost sight of, is so consistent with the soundest philosophy, that one is at a loss to conceive how any objection could be taken to it; and yet there are men who characterize it as a piece of humbug. The opposite method—that of giving first (and in too many instances *only*) the sign, is opposed to the very first principles of true education, and, if carried out, can only result in giving the semblance of knowledge without its reality. In all cases let the teacher present first to his pupils a clear picture of the idea, and its name will then acquire a meaning which it would not otherwise have, and when used, will call up a distinct conception in the mind. This linguistic aspect of these oral lessons is one, in our estimation, of great importance, which ought never to be lost sight of. It has been admirably remarked "What we have in the first place to do with, as representative reality, is spoken language. Now, it may be asked, to what is it owing that the same person, in humble life, whose provincial tongue is pregnant with meaning and full of vivacity, when he tries to speak correctly, which he may in some measure be able to do, expresses himself in the most formal and insipid manner? We think it the chief reason, as language possesses little or no intrinsic interest, deriving its suggestiveness from objects connected with it in the mind, that the rich

provincial dialect has been associated in countless repetitions with objects of living and perceived interest; whereas the correct mode of speech is chiefly remembered as having been met with in books, and it is therefore unaccompanied with fancy or lively conception. * * In order to be clearly understood, language must be easily spoken. The mere reading of school lessons will not fully accomplish either. The only successful course will be to associate words of pure English with felt and living realities."*

ORAL LESSONS.—SECOND STAGE.

6. The elementary lessons, briefly described in the last paragraphs, train the children to observe the properties and qualities of objects, and supply them with correct terms for the expression of their ideas. A subsequent series of lessons should have in view the tracing of the relations which subsist among the various parts of an object, or between different objects. This calls for a higher exercise of mind than the foregoing class of lessons, and may be made most valuable as a means of mental discipline, besides communicating a large amount of useful and valuable information. Thus, in an elementary lesson upon the elephant, it might be sufficient to convey to the children a very general idea of his size, appearance, and parts. In this second stage, however, the relation between the various parts of the animal should be pointed out, and attention called to the connection which subsists between his structure and his habits. The animal has got a very large and heavy body; hence we might infer something regarding his legs. They would require to be strong. The children may be told that they are almost perpendicular, like pillars supporting a heavy roof. He has also a heavy head, the weight of which is increased by the tusks. Suppose he had a long tapering neck like the camelopard, what might the consequences be? What kind of neck has he? But he obtains part of his food on the ground. His body being large and his neck very short, how can he accomplish this? Such questions prepare the mind for seeing a beauty and a wisdom in the compensation supplied in the shape of the trunk. We shall give several specimens of such lessons when we come to treat of subjects of oral lessons.

ORAL LESSONS.—THIRD STAGE.

7. A still higher grade of oral lessons should be given, with the view of training the reasoning powers, and of leading the children to infer consequences from premises laid down for them. "By books,

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* Prize "*Essay on Education*."—Rev. D. Smith, p. 8.

the pupil can never be properly exercised in reasoning. As conclusion and premises follow one another, both of them being placed before the reader, he is under great temptation to assume both on equal authority. Hence the means must be used, in the first instance, to induce him to draw inferences which he has not thought of beforehand. Some men, entirely unexercised in reasoning, know just as much as they are told in plain language, or as they can perceive by their senses; but all men of ordinary capacity are able to acquire the power of concluding something involved in what is sensible, and deducing inferences from the information communicated to them. We would set out in lessons of this sort from something which the pupil knows, or which can be made patent and palpable to his senses, and go on from simple processes to more difficult, the complex conceptions thus acquired forming the components of new reasonings."* This series of lessons might embrace various portions of physical science—such lessons as we have specified in the chapter on geography—the more common pieces of machinery—the instruments employed in philosophical pursuits, such as the barometer, thermometer, &c. It is during this stage chiefly that the application of science to the explanation of common things should be dwelt upon. Every lesson should aim at turning the attention of the pupil to an examination of those phenomena that meet him in his daily life. In this way all these lessons become lessons on the science of common things.

8. To conduct these lessons aright, the master must make himself well acquainted with each subject in all its bearings. The ability to talk to children upon a great variety of subjects does not necessarily imply that the master is capable of communicating real information, or of training the minds of his scholars. Something more is necessary than merely the power of speaking. The master must have ideas to communicate, and, in order to this, he must make a point of familiarizing himself most thoroughly with the subject. It is, no doubt, true that a person, whose stock of knowledge is large, may not on that account be the one who is best adapted to teach. But, if we were compelled to make our choice between the man of full mind and exact knowledge, but who may be somewhat defective in the art of communication, and the man of shallow views and vague conceptions regarding a multitude of things, but who may be apt to teach, we would have little hesitation in choosing the former. Where there is a full mind, there will constantly be streaming forth from it suggestions, and hints and thoughts, which will have far more effect in kindling the spark of intellectual life in children than the common-

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* Prize "*Essay on Education*."—Rev. D. Smith, p. 23.

place verbiage of him who has a mere smattering of science. The first essential requisite, accordingly, in conducting these lessons, is that the master be at home in regard to each particular subject. Mr. Mosely remarks very justly and pertinently on this point—"That which lies very generally at the root of the failure of such lessons, and makes of what would, under other circumstances, be the most successful expedient and the highest resource of education, in too many cases an impediment to it—is an inadequate knowledge on the part of the teacher of that which he is teaching. He may know many things, and be generally a well-informed man, but if he fails in his lesson, it is commonly because he does not know the particular subject of that lesson. If his knowledge of it had covered a larger surface, he would have selected matter better adapted to the instruction of the children. If he had comprehended it more fully, he would have made it plainer to them. If he had been more familiar with it, he would have spoken more to the point. Wanting this knowledge of the subject, the time allotted to his lesson is filled up with words foreign to the matter in hand, as though it were a time set apart to be covered with a certain amount of talk, and as though a teacher must be assumed, as a matter of course, to be teaching so long as he is talking." Mere surface knowledge will not suffice. Where the knowledge extends no deeper than the surface, the teacher will to a certainty get into the habit of repeating, and of causing the children to repeat, words to which no definite meaning is attached. The knowledge must be deep and searching. The teacher must know the subject in its own nature and in its relations to other things. And, not only must the teacher have thus a thorough knowledge of the subject, but he must also possess skill and judgment to select those materials which are logically connected with the main subject, and to reject those which are connected in appearance but not in reality. All extraneous matter must be cast aside. Each lesson should have some one definite object in view, and while many things may be brought out incidentally in the course of it, they must be of such a nature as to bear upon the central idea of the whole. All the lines of each lesson must converge to one focus, and the lesson is not complete until they have all met, and until each is seen to have had a certain definite share in producing the final result. The skillful teacher will be known as much by what he rejects as by what he admits. We need only further add that, while each lesson is thus complete in itself, it is not necessary that the lessons follow any due order. One day the lesson may be upon some part of pneumatics, the next day on hydrostatics, and so on. But while this is the case, the teacher should carefully keep a memorandum of the lessons given, and of the points brought out, that he may thus know the exact point at which to begin any new lesson. Unless some such memorandum be kept, there will be little likelihood of the successive lessons fitting into each other, and progress will be uncertain and unsatisfactory. To enable the teacher to ascertain where, in any given lesson, he ought to begin, he should preserve carefully the notes and heads of the lessons which he prepares for his own use previous to coming to the class.

9. Having thus selected the materials for his lesson, the teacher's next duty is to arrange them in the order in which he wishes to present them to his scholars. There is no stereotyped method of arrangement; nor can any models be presented which the teacher can, in all cases, implicitly follow. He must have the subject in all its bearings clearly mapped out in his own mind; and must determine on treating it in some given order; but the method of treatment will vary with the varying subjects. To adopt a plan which must be rigidly adhered to throughout, will be productive of as much harm as good. Many suggestions will be made by the pupils, as the lesson proceeds, and it is essential to success that the teacher be able to catch up these suggestions, and work them in to the lesson naturally and without effort. The chief thing to be attended to is that the teacher have some definite end in view in giving the lesson; for, when this is the case, he can intuitively turn to advantage every hint which occurs in the course of it. Where he adheres too rigidly to some one mode of arrangement, he may be able to see straight before him, but will miss many of the beauties which adorn the bye-paths. If, on the other hand, he has no definite end in view, he will be apt to linger altogether upon the various paths which cross the main road, and will thus never arrive at his destination. In all lessons he must commence with what the children know. Where he has to lay a foundation for the lesson, he ought to commence with that which possesses most interest, and makes the deepest impression, and thence proceed to what is less interesting, but, it may be, equally valuable. In giving lessons upon animals, the teacher may commence with the structure, and thence infer the habits and uses; or he may commence with the habits and uses, and thence infer the structure. As the structure of such domestic animals as the cow, the horse, &c., is well known to children, we would commence at this point in lessons on these animals. In lessons, however, on animals of the structure and habits of which the children were equally ignorant, we would prefer beginning with the latter, inasmuch as we could render such instruction very inter-

esting by the introduction of anecdotes, &c. Having thus laid the foundation, the pupils would follow with interest that part of the lesson which bore on the structure. In lessons on science and common things, the analytic or synthetic methods may be adopted, according as the teacher finds the one or the other more suitable. Thus in a lesson on "Smoke," we might commence with the smoke as it is seen issuing from the chimney, and trace its history backwards until we reached its cause. In a lesson on the "Winds," on the other hand, we might commence with the causes, and follow these out to their effects. In many subjects, especially those involving important discoveries and inventions, we might adopt what has been termed the Genetic method—that is, carry back our pupils to the very first steps of the discovery or the invention, and lead them gradually onwards to the present time. These hints, combined with the specimens we shall give, may be of some service to the young teacher in the matter of arrangements.

10. To assist the memory, and to make sure of due preparation, the teacher ought to commit to writing the leading points in each lesson. These "Notes of Lessons," as they are termed, are liable to be much abused; and we must be cautious in our recommendation of them. Sometimes the teacher writes out a series of questions and answers, and comes before his class in the expectation that the answers given by the pupils will correspond to those he has written. This seldom, if ever, happens; and accordingly the master, not receiving the answer he looked for, is thrown off his guard and is apt to become confused. Others again write out the substance of the whole lesson, which is of service in so far as it gives a mastery of the subject which nothing but writing can bestow. This plan, in the case of every lesson, entails an immense amount of labor, and, where the master has many duties to attend to, can not be well adopted. We would advise the teacher first to determine the leading points which he desires to bring before his pupils, and to write these down as the main stays of the lesson. He should next proceed to take up each part in detail—to reflect upon the method he would adopt in illustrating it and making it clear to his pupils, and thereafter commit to writing the leading thoughts under each division. He would thus have an abstract of the lesson in the order in which it was thought out, and a glance at the abstract would bring the whole vividly before him. For convenience in reference, he should next arrange the notes in such a way that, in the margin he would have the leading heads of the lesson, and in the remainder of the page those hints, illustrations and suggestions which presented themselves to his mind in the course of

preparation. Should he desire to write out the notes in full, this could be easily done. In the actual business of teaching the teacher should trust to his notes as little as possible. The heads of the lesson should be amply sufficient to guide him to the whole. The best notes are a full and thorough understanding of the subject, without which, indeed, all the notes in the world are but so much waste paper.

11. In conducting these oral lessons, it must be borne in mind that both master and scholars should bear their respective shares of the work. Any approach to the style of the pure lecture is to be deprecated, inasmuch as it encourages idleness in the pupils, and tends to render the master contented with giving information, without taking any precautions to ascertain if the information has been received. The master's part in the work is to have the particular subject in hand thoroughly got up, to be well acquainted with it in all its bearings and connections, and to have the various parts of it arranged in logical order, so that, when put together, they may form a connected whole. When he has all this ready, he introduces the subject to the notice of his pupils, and by means of questions, ellipses, suggestions and illustrations, he aids them to reason out consequences from the premises which he supplies. Oral instruction thus assumes the form of a conversation, in which the master acts the part of guide, while the minds of the pupils are constantly employed in making what to them amounts almost to new discoveries. This must never be lost sight of, because the tendency to lecture instead of train the scholars is naturally strong. In school, the lecture is comparatively useless. In its own place, and among those whose minds are sufficiently developed to follow a long train of reasoning, it may be turned to high account; but with pupils of the age ordinarily found in our elementary schools, the ability to listen to or comprehend a lengthened discourse has not been acquired. The master, accordingly, must supply his pupils simply with the facts on which he intends his reasoning to be based, and must lead them to draw the inferences from these facts. For this purpose he must make large use of analogy and illustration. Whenever a term is employed with which the pupils are not familiar, it must be clearly explained, and in the case of illustrations, he must always employ a known thing to illustrate an unknown. Unless this be attended to, no real progress can be made. The illustration must, in all cases, be from a familiar subject to one which is not so familiar. Thus, to illustrate the fact that air exerts a pressure, the case of the boy's sucker may be employed. This is a thing with which children are generally well acquainted, and the introduction of such an illustration will give the lesson a vividness and a naturalness, which it

might not otherwise possess. Analogies, in like manner, should be real and not apparent. Thus, in conducting a lesson on the circulation of the blood, recourse may be had for illustration to the mode by which a town is supplied with water. We have, in both cases, the great central reservoir, constantly sending off a fresh supply of the precious fluid; and in both we have the means of conveying away the fluid when it has served its purpose. The teacher should constantly endeavor to set before his pupils a distinct mental picture of the subject of which he treats; and, for this purpose, should press into his service every possible aid. Illustrations, analogies, pictures, drawings on the blackboard, &c., should be all employed to render the lesson graphic and interesting; for, unless it be made interesting and life-like, it will assuredly be a failure. While, therefore, in conducting any lesson, the teacher must attend to his manner, must modulate aright the tones of his voice, and must use appropriate gestures, he must not forget that all these things are but means to an end; and that, while in these respects the lesson may be faultless, it may still fail in making any impression on the scholars, simply because it was not interesting to them.

12. The remark with which we concluded last paragraph, furnishes one of the test which the teacher should employ in judging of the success with which he has conducted any lesson. In ordinary circumstances the teacher has nothing to guide him in this respect but the effect which the lesson is seen to produce. But the very fact of his isolation renders it incumbent on the conscientious teacher to adopt tests, whereby he may judge of the practical success of his teaching. In oral lessons, the life and interest displayed by the pupils will generally be a sure index to the ability and skill, or the reverse, with which the master conducts the lesson. Whenever, accordingly, he finds the pupils listless, dull, and restless, he may rest assured that he has failed to secure their interest, which is the first requisite in all teaching. After every oral lesson he should ask himself, not what stores of information have I poured out since the lesson began, but how much of that information have the children received? Let him adopt it as a maxim that a lesson has never been thoroughly given until it has been received. In addition to the test of which we have spoken, the master should devote a few minutes at the close of each lesson to the questioning of individuals on the leading points brought out; occasionally, also, the pupils may be required to write out the substance of the lesson, an exercise which will at once show how much of it has been received, and to what extent it has been understood.

13. NOTES OF LESSONS.—FIRST STAGE.

Example I.—The Cow.

Introduce the subject in a simple, natural way—Ask what the children take along with their porridge—*milk.* Whence do we obtain the milk—*from the cow.* Where will the cow generally be seen—*in the fields.* What doing—*eating grass.* What does the cow generally live upon? Notice the different *colors* of the animal; and see that they know what each color is like—some are *white,* some *black,* some *spotted,* and so on. What has the cow, of which this is a picture, got upon her head? *horns.* Have all cows horns? Of what use are the *horns* to the cow? How does the dog defend himself? the horse? the cat? &c. What is the *size* of the cow? Point out some object in the room about the same height, the same length. What do you call the young of the cow—*a calf.* You have said that we obtain milk from the cow. Is the cow of any other use? When the cow is killed, what do we do with her flesh? *eat it.* What do you call the cow's flesh, when she is killed? *beef.* Where do you buy cow's flesh or—*beef?* *In the flesher's,* or in the—*butcher's?* Is the skin of any use? What do you wear on your feet to keep them warm? *shoes.* Who makes the shoes? *the shoemaker.* What does he make them of? *leather.* Where does he get the leather? What is it made of? Notice in the same way the uses to which the horns, the hair, the milk, &c., are put. Such a lesson as the foregoing exercises simply the observation of the children, and gives them correct terms in which to express their ideas.

Example II.—A fire.

Where do you find fires generally placed? *in the grate.* (In a country district, in which there may be few grates, a different answer would be given.) What is the fire made of? of *coals,* of *sticks,* or *peats,* as the case may be. Did you ever see any one putting on a fire? What did they do first? Were the coals placed exactly at the bottom? What was placed below them? Why were the sticks placed below? Were the sticks placed flat on the grate? How were they placed? *slanting.* Why? After the sticks were laid in, what was next done? Were the coals thrown in or laid in? What would have happened to the sticks if the coals had been thrown in? What kind of coal were placed first upon the sticks? Why small pieces, and not large? Where was the fire applied? What did the sticks then begin to do? *to burn.* And what did this do to the coals? *It kindled them.* What did you see rising from the coals? *Smoke.* And what became of the smoke? *It went up the chimney.* What then is the use of a chimney? *To carry away the smoke.* If there were no chimney, where would the smoke go? *It would fill the room.* And how would you feel when the smoke filled the room? *Sore, uncomfortable, uneasy, unpleasant.* It would not be—*nice,* or—*pleasant,* to sit in a room filled—*with smoke.* Is the fire of any use? *It warms us.* Yes, it warms you, and makes the room—*warm.* What would the fire do, if you went too near it? *It would burn us.* Little children should never meddle with—*the fire;* they should always keep away—*from it.* Various other uses might be pointed out, and other simple lessons drawn. At a somewhat more advanced stage, the most economical way of making or of kindling a fire might be pointed out, and thus even to young children might be taught the science of common things.

Example III.—The Camel.

Exhibit a picture of the animal, and then ask them such questions as the following: What animals do we employ in drawing carts, carriages, and other machines? *The horse—the ass.* You have all seen a horse; what has he got on his feet? *Shoes.* What are they made of? *Of iron.* Why does the horse require shoes? What might happen to your feet, if you went barefooted among stones and such-like things? I saw a boy, when I was coming to school, running very fast along the road, and he had no shoes on. He struck his foot against a stone, and what happened, think you? *The foot was cut.* Yes, he hurt—*his foot*, and it felt—*very sore.* Now the horse has to go on rough stony ground, and what might this do to his hoof—*it would hurt it. Please, sir, I saw a horse which had lost his shoe, and he was lame.* Quite so, the horse would soon become lame if he had to work without—*shoes.* Now did you ever see a camel in this country? Do any of you remember where the camel lives? Yes, in—*hot, sandy countries.* Do you think will the sand be as hard as our roads, or streets? No it will be—*soft and yielding.* Do you think then that the camel will have shoes on his feet? Whether would you walk more easily through soft sand, with your shoes off or on? *With our shoes off.* Why? In this way, by noticing the habits of the animal, and by familiar illustrations, the children will be prepared to expect a difference between the camel's foot and that of the horse. In a similar way, by describing to them the long journeys which he is obliged to take through deserts, in which there is no water, they are prepared to appreciate the full value of the remarkable provision whereby this animal deserves the appropriate name of "the ship of the desert." As already remarked, instead of commencing with the habits and uses, the teacher may begin with the structure, and thence proceed to infer the uses. In all these lessons the teacher should never fail to call the attention of the children to the goodness of God in accommodating each animal to the circumstances of its life. We shall divide the following example into two parts, the first being suitable for young children, and the second for those who are more advanced.

Example IV.—The Elephant.

FIRST STAGE.

Introduction. Form and shape. Size. Uses.

Who have seen one? where? are they to be found in our fields, like the cow? no. Where then? in Asia and Africa.

Exhibit a picture of one—note the form—the body very clumsy—rounded, and large—neck very short, with large head—tusks—trunk—eyes small—ears long—feet short and thick.

Exhibit picture of comparative sizes of animals, show its position among other creatures—then by comparison give an idea of his actual size—compared with the horse—is he larger or smaller? Give average absolute height—about 12 or 15 feet—show this height by reference to the height of ceiling—give some idea of his actual bulk by showing what part of the room he would occupy.

Give anecdotes to show his disposition—his uses to man—the mode of his capture and so on.

By means of illustrations, comparisons, and contrast, animals which the children may never have seen can thus be brought somewhat vividly before them. Assuming the foregoing facts to be known, we proceed, in the next stage, to reason, compare, and deduce conclusions from what has been observed.

SECOND STAGE.

Relation between body and legs. Relation between skin and eyes, and mode of life. Relation between head and neck.

Show if there is any connection—use of legs—a bridge for foot passengers, and one for a heavy railway train, would require what kind of pillars? Why the difference? Compare also the support of a heavy building and a light one —the legs of a child and a man. The legs must be made to support the body, their size and strength will depend what on? Now notice the remarkable fact that the legs of the elephant are verticle—like a pillar—each bone resting vertically on the one beneath it—the strongest form that could be devised. Note God's wisdom and goodness.

Either give the facts as to the skin and eyes, by showing how the first is hard and wrinkled, and the latter small and sunk, and from these facts deduce the mode of life; or, which in this case might be better, give his mode of life—living in the thick jungles of tropical forests, requiring to move among the tangled masses of undergrowth, with his huge unwieldy body, and then deduce what kind of skin and eyes would have been most suitable—a soft, easily pierced, or a hard, almost impenetrable skin—large protruding eyes, or small sunken ones. Note again the wisdom of God.

Note the head with tusks of great weight, and show how a long, tapering neck would have suited—and then observe the remarkable compensation supplied in the trunk, and the exquisite construction of this instrument so as to suit the creature's wants.

14. We subjoin a brief list of lessons suitable for the first stage of instruction. They are arranged in no given order, and are intended to indicate to the young teacher the almost inexhaustible supply of subjects of lessons. The great majority are selected from the list of those given in the Initiatory Department of the Practicing Schools of the Glasgow Free Church Training College.

Monkey,
Seal,
Bear,
Lion,
Dog,
Hare,
Mouse,
Camel,
Whale,
Owl,
Starling,
Turkey,
Goldfinch,
Partridge,
Herring,
Spider,
Grate,
Door,

Rose,
Gooseberry,
Cabbage,
Barrow,
Window,
Table,
Bell,
Chimney,
Chair,
Clock,
Cherry,
Apple,
Lobster,
Butterfly,
Frog,
Elephant,
Ass,
Sheep,

Linnet,
Lark,
Hen,
Swallow,
Vulture,
Deer,
Hog,
Rabbit,
Squirrel,
Badger,
Leopard,
Bat,
Hedgehog,
Cat,
Weasel,
Wolf,
Carrot,
Carriage,

Rat,
Sloth,
Horse,
Reindeer,
Eagle,
Thrush,
Duck,
Cuckoo,
Crow,
Worm,
Moth,
Crab,
Strawberry,
Peas,
Watch,
Sofa,
Clay,
Mortar,

Mole,
Tiger,
Ferret,
Fox,
Beaver,
Gold,
Silver,
Hair,
Shilling,
Sugar,
Slates,

Hawk,
Pigeon,
Sparrow,
Salmon,
Oyster,
Pear,
Lead,
Tin,
Thimble,
Pin,
Honey,

Stool,
Book,
Paper,
Glass,
Leather,
Grass,
Leaves,
Copper,
Iron,
Scissors,
Shoes,

Milk,
Cheese,
Sponge,
Gutta Percha,
India Rubber,
Pen,
Wax,
Coals,
Stones,
Needle,
Balloon.

The various trades might also be made the subjects of lessons—the shops in the neighborhood, and the most common domestic operations—thus:—

The making of
Tea,
Bread,
Butter,
Cheese,
Candles,
Porridge,
Jam,
Jelly,

The Grocer's
The Baker's
The Butcher's
The Greengrocer's
The Tailor's
Shop.

The Washing of Dishes.
Scouring the Floor.

As examples of lessons of a miscellaneous character, we may subjoin the following:—

Cleanliness and neatness of Person,
Advantages of Punctuality,
Covering of Birds,
Harrowing, Ploughing, &c.,
The principle of Weaving,
Yarn and Thread.

NOTES OF LESSONS.—SECOND STAGE.

15. We have already given one specimen of notes suitable for the second stage under the head "Elephant." We may also give the following:—

Example I.—Winnowing of Corn.

Why necessary. Object of winnowing. Grain and chaff. Separated by wind. Modes of winnowing. a. Natural. Objections to this mode. b. Artificial. The fanners. Construction. Winnowing defined.

To protect the grain when growing it has a covering—chaff. As the seed of the pea is contained in a pod, and that of the cherry in a pulpy substance, so grain has a covering for its protection. This covering—this chaff—becomes mixed with the grain when it is thrashed, and requires to be separated from it before the grain is fit for use.

The chaff must be separated from the grain. We have a heap of grain and chaff combined. What we require is the grain, not the chaff. What must we therefore do? We must obtain some means of getting rid of the chaff. The chaff is light, the grain is comparatively heavy. The chaff is very easily blown away. When you pull some stalks of growing corn from the field, you rub them in your hand, and then, changing the particles from one hand to the other, you blow upon them. Why do you do so? By blowing you drive away the chaff, and leave the grain. The chaff can thus be separated from the grain by wind. Would such a plan as this suit if there was a large heap? No, it would be too tedious—would take too much time: we must therefore devise some other way.

Suppose we have a barn with two doors opposite each other—a strong wind is blowing, which causes a current of wind to pass through the barn—if we now throw up the corn, what will the current do to the chaff? It will blow it away, and the grain will fall. This plan is adopted, and was once very common; only, instead of throwing up the corn, it was put through a sieve or riddle. (Show how.)

To winnow in this way, we require to have two doors opposite each other—both open. We require also wind, but this we have not always; and even when we have wind, it might happen to be raining, and the rain would be blown in along with the wind; hence this plan is not very convenient.

If I move this book rapidly backwards and forwards before your face, what do you feel? Wind. What causes it? (Show by this, and other simple illustrations, that we can produce currents of wind artificially, and these currents may be as strong as we choose.) It is on this principle that the fanners are constructed. There is a wheel, something like the paddle-wheel of a steamboat. This wheel is turned rapidly round. Its revolution produces a strong current of wind, which is made to play upon the corn, and thus the chaff is separated from the grain.

Winnowing is separating the chaff from the grain; and is commonly effected by means of the wind artificially produced by a machine called the fanners.

Example II.—The Spider's Web.

Food of spider. How obtained. By means of its web. Web where formed. Of what formed. How formed. Spider's citadel. Dryden's description of the spider in her web.

The spider lives on flies and small insects. How do we catch flies? We might do it by the hand. The swallow catches them by its mouth, as it darts swiftly through the air. The spider has no hands, nor has it the rapidity of the swallow. How then does it obtain its food? If we wish to catch mice, what do we do? We set a trap. So the spider, *taught by instinct*, sets a trap to catch the flies on which it lives.

This trap is its web. It cunningly weaves a web with which to entrap the unwary flies, and, having entrapped them, it then feeds on them.

The house spider generally forms its web in the corners of a room or window. Why in the corners? Because it is more convenient to fix the two ends of the main threads on the corners; and on the window, because flies are more numerous there than on any other part of the house. The garden spider, for a like reason, generally forms his web among the bushes, in order to have points on which to hang it.

When we want to make a web we require threads. How does the spider obtain threads? Does it buy them, as we do, from a shop? No. The spider has in its body a gluey substance, from which it forms the web. "Nature has supplied it with a large quantity of glutinous matter within its body, and with five papillæ or teats, for spinning it into thread."

"When a house or common spider is about to form a web, it selects some commodious and secure spot, where insects appear to be in sufficient abundance.

It then distils a small drop of its glutinous liquor, which is exceedingly tenacious; and, creeping up the wall, and joining its thread as it proceeds, darts itself, in a very surprising manner, to the opposite station, where the other end of the web is to be fastened. The first thread thus spun, the spider runs on it to and fro, assiduously employed in doubling and strengthening it, as on its force depends the strength of the whole. The scaffolding being thus complete, the spider draws a number of threads parallel to the first, and then crosses them with others; the adhesive substance of which they are formed serving to bind them together when newly spun." When we make a web, we first lay thread lengthwise, then we insert others crosswise; so the spider. Having thus made the web, it covers it over with the gluey substance, that the feet of the fly may stick to it. It then spins a small house for itself, which is connected with the web, where it lurks until an unwary fly becomes entangled in its web, when it sallies forth and instantly destroys the unhappy intruder.

> The treacherous spider, when her nets are spread,
>   Deep ambushed in her silent den does lie,
> And feels, far off, the trembling of her thread,
>   Whose filmy cord should bind the struggling fly.
> Then, if at last she find him fast beset,
>   She issues forth and runs along her loom;
> She joys to touch the captive in her net,
>   And drags the little wretch in triumph home.

Example III.—The common Bat.

Description of. Belongs to the class mammalia. Its habits and mode of living. Why it exists. Adaptation to its mode of life. Senses of hearing and touch acute. Flies lightly. Can live on a small amount of food. In winter becomes torpid.

About the size of a mouse, and somewhat similar in appearance—has long ears, small eyes, four feet, and a covering of soft, darkish-colored hair, tipped with red. Feet five toed. Each of the fore feet has the inner toe loose from the others, and furnished with a hooked claw; the other four are enveloped in a thin, loose membrane, extending over all the body except the head, which, when the toes are spread, form the animal's wings. Toes of hind feet have hooked claws—mouth provided with teeth.

For a long time it was reckoned a bird; but it must be ranked among the mammalia, as it brings forth its young alive, suckles them, and has lungs like those of quadrupeds.

It makes its abode in holes of trees, caves, old ruins, etc.—is seen only during fine, calm evenings of summer and early autumn. Why? Its food consists of small nocturnal insects. It can not support itself on the wing for more than an hour at a time. Why? Owing to the delicacy of its wings. It builds no nest. Why? It can not easily raise itself when resting on its feet. It hangs by its hooked claws to the side of its hole, and in that position suckles its young. It passes the most of its time asleep. On the approach of cold weather, becomes torpid, and remains hanging to the side of its hole.

During the day many birds are clearing the air of noxious insects, but as evening comes on, they retire to rest. Many noxious insects fly only during evening and night; these are preyed on by the bat.

Most nocturnal animals are provided with large eyes. Train out why? The bat has small eyes; therefore must be adapted for finding its food in the dusk by some other means. What are these? It senses of hearing and touch are very acute. Train out how the delicacy of these senses enables the bat to find its food. Noise made by the insects, and the vibration of the air.

To prevent the insects being scared by the flight of the bat, it flies very lightly, and without noise.

But the delicacy of its wings renders it unfit to fly long at a time; it must therefore be enabled to live on a small amount of food. It is so—and how?

It sleeps most of its time; and in winter and spring, when there is no food for it, it is torpid. GOD'S WISDOM AND GOODNESS.

Example IV.—Reaping of Corn.

Corn when ripe is cut by the hook or scythe. Mode of cutting. Effect of wind. Effect of rain. When cut it is put in stooks. Why? The stack yard.

When reaped—why not in summer, when the corn is green? It must be allowed to ripen to render the grain of any use. No fruit or grain is of much service until it is ripe—an apple—the potato—wheat, &c. Grain is ripe in autumn. How does the farmer know when it is ripe?—by its color and by the firmness of the grain, &c. When ripe he cuts it. Why not pluck it?—it would be difficult—it would cause much earth to mingle with it, which would be difficult to remove again. Sand is not very nice in bread or porridge; and the farmer keeps as much of the sand out as he can. Does he cut it with a knife, as you would a stick?—no. Why not?—it would take him too long time. What then does he use?—he uses either a hook or a scythe. Show how they are shaped, and why. If he uses a hook, does he work it as he would a scythe? no. Show how the reaper uses the hook—catches a handful of corn in his left hand, and cuts with the right. When using the scythe, does the farmer catch the corn with one of his hands?—why not?—what enables the scythe to cut through?—why does he cut it close to the ground?

If wind was blowing, would the farmer cut with or against the wind? What wind most favorable? Why would not the farmer cut in a very high wind?—why not in a wet, rainy day? What effect would the rain have on the cut corn?—hence what day most suitable for harvest operations?—a dry day, with a moderate wind blowing.

When the corn is cut, does the farmer leave it lying on the ground? What does he do?—he binds it into sheaves, and puts it into stooks—the shape of the stooks. What is the object of so putting it in stooks? Bring out that when uncut, even though ripe, the stalks had sap in them, and that if they were tied up in sheaves, and built in the stack-yard, they might rot. Why? Hence the grain is left in the field until it is quite dry.

What is then done with it?—it is built into stacks—their shape—why sometimes raised from the ground, and hollow inside.

Example V.—Why do we Water our Streets in Summer?

State of streets in hot weather. Water cools the streets. Water cools the air. Effects of watering our streets.

In summer, if the weather is hot, what happens to our streets?—they become parched, filled with dust, and very disagreeable. The dust, moreover, is injurious to our clothes, and to goods in shops, where the doors require to be open. Show how penetrating is the dust. How may we allay it?—by sprinkling water on the streets, just as a servant sprinkles tea leaves on the carpet before beginning to sweep it. The sprinkling of water thus keeps down the dust.

It does more. On a hot summer day, when the sun is shining, how do you feel if walking along the street?—very warm. Which side of the street do you walk on?—on the side sheltered from the sun. Why?—it is cooler and more pleasant. How do the stones feel?—hot—and they radiate that heat to the atmosphere, which also becomes hot, parched, and disagreeable. Sprinkling water on the streets not only keeps down the dust, it cools the streets.

It does more. What becomes of the water thus sprinkled?—it evaporates—passes off in the form of vapor. What causes it so to do?—heat. Heat is the cause of evaporation; but whence does the water obtain this heat? If you place your hand on a piece of iron or brass, how does your hand feel?—cold. Why?—the iron or brass abstracts the heat from the hand—the heat passes from your hand into the iron, which is in contact with it. So here, the warm, heated air is every where around the water—the heat passes from it into the water, and so causes it to evaporate. But will the air, having thus parted with a portion of its heat, be warmer or colder than before?—colder. It will be cooled.

The watering of our streets not only keeps down the dust, but it also cools the streets and the air, and makes it more pleasant for people to move about.

Example VI.—The Duck.

Form and shape. Its mode of life determines the kind of covering, the supply of oil, the position of legs and kind of feet, and the bill. Uses.

The Duck is about the size of a hen—about 23 inches in length—35 in girth—and weighs about 2½ lbs. Exhibit picture of—has two legs, placed pretty far back—effect of this—too much weight in front—hence when walking how does it appear? *Clumsy*. Covered with feathers—bill—eyes, &c.

Aquatic—picture out the term—lives partly on water, partly on land. Feeds on insects, grubs, and grain. Trace the connection that subsists between its living in water and its covering—what might the water do—make it cold—hence what? A thick downy covering—where? On those parts which are most exposed to the water, *i. e.* on breast and belly—note the wisdom in this—specific provision for a specific want.

Again what does water do to the feathers—ruffles them—now what may you observe ducks doing on a rainy day?—picking and dressing their feathers. Note the oil—compare it in this respect with a *droukit* hen—again a specific provision for a specific want.

Compare legs with those of the hen—what difference?—shorter. Why? Long legs would interfere with its motion when swimming. Compare feet with those of the hen—they are webbed—why? Show how it uses them. Bring out at this point the reason why the legs are placed far back—illustration—in driving a boat are the oars exactly in the middle—why? Again a greater weight in front enables the animal to plunge its head more easily beneath the water.

Compare its bill with that of hen—what difference do you observe—the duck's is shaped like a spoon—why? Show the nature of its nostrils, which act like a sieve in separating the food from the mud—the tongue also is very broad.

Eggs—Feathers—Flesh.

Example VII.—The Nests of Birds.

HEADS.—1. The use of the nest.
2. When formed.

3. What determines the situation.
4. What determines the material.
5. What determines the size.
6. Particular examples.
   a. The thrush.
   b. The lark.
   c. The eagle.

Example VIII.—The making of Grain into Meal.

HEADS.—1. Why grain requires to be ground.
2. The process.
   a. The drying—its object.
   b. The separation of the husk.
   c. The sifting.
   d. The grinding.

16. All the subjects given under the first stage may very appropriately be gone over in the second, somewhat in the manner indicated in the example "The Duck." The various parts of the animal—their relations to one another—the structure, and the connection between it and the habits and modes of life, may be thus exhibited more fully than was possible in the first stage; and the lessons thus made the means of communicating much useful information, and of developing the faculty of observation and the power of deducing simple but very important inferences. In addition, however, to the list of lessons already given, we may subjoin as specimens the following:—

The eye—its position and protection.
The manufacture of salt from sea-water.
The manufacture of wool into thread.
The common pump.
The thrashing of corn.
What is smoke—how may it be consumed.
Comparison between hen and duck.
Comparison between cat and dog.
Comparison between lion and tiger.
Comparison between elephant and camelopard, &c.
Glass—of what composed and how manufactured.
Paper—how and from what manufactured.
Tears—their nature and use.
What ought to be the exposure of our gardens.
How to prepare good tea.
Why does a gardener cover his flower-beds with matting in a clear calm night.
What kind of clothing should we wear in winter?
The evil effects of tight lacing—of tight boots, &c.
The beaks of birds—why difference in?
Which is warmer—a sheet or blanket.

The preceding examples will indicate to the young teacher the wide field from which he may cull the subjects of oral lessons.

NOTES OF LESSONS.—STAGE THIRD.

17. In regard to the class of lessons suitable for the third stage we beg to refer the reader to paragraph 7. The train of reasoning is considerably longer in the following specimens than in any of those previously given.

Example I.—The Thermometer.

Meaning of word. Various modes of determining the amount of heat. Effects of heat constant. Expansion furnishes measure of heat. Expansion of liquids most suitable. Mercury commonly employed. Glass Tube. How graduated. The Scale. Centigrade. Fahrenheit's. Reaumur's. How reduced to the same standard.

Means *heat-measure*, an instrument for measuring the quantity of heat in any given substance.

There are various modes of determining the amount of heat, e. g. *the sense of touch;* this is variable in different individuals, and in the same individual in different states of the body. What is warm to one may be cold to another, and *vice versa;* this consequently would not suit—so of other modes.

The effects of heat under given circumstances are constant for all places; one of its effects is expansion. Heat expands bodies, and that uniformly in all countries, according to the amount of it. *Expansion may consequently be assumed as a measure of heat.*

Solids expand under heat, but not to such an extent as to be easily appreciable. Gases expand too much to be conveniently employed. Liquids expand not so much as gases, but more than solids, and more uniformly than either. *Hence the expansion of liquids is employed as the measure of heat.*

Mercury expands very uniformly, and is most commonly employed; and *by observing its expansion and contraction, we have a sufficiently accurate measure of heat.*

For convenience sake, the mercury is confined in a tube, containing a bulb at one extremity, and closed at the other—*tube made of glass*—why? (Exhibit model, or draw one on blackboard.) Show how the tube is formed.

To enable us to read off the different amounts of heat in any substance at different times, the tube *has a scale fixed to it*—how formed? Two points are selected as the extremes, these points are the freezing and boiling points of water—plunge the tube into water when in the act of freezing, and mark where the mercury stands in the tube, (mark it on your drawing,) and you have the freezing point. Again, plunge it into water when boiling, mark where the mercury stands, and you have the boiling point. Call these two points any numbers you choose, say, 0 and 100; divide in this case the intermediate space into 100 equal parts, and *you have the scale.* These equal spaces are called degrees.

Such a Thermometer is called the *Centigrade*—why? *centum* and *gradus.*

The one generally used in this country *is called Fahrenheit's*—why? In it the freezing point of water is marked as 32, and the boiling point as 212. The intermediate space is divided into 212—32=180 equal spaces or degrees. Show why Fahrenheit employed these numbers.

Another one, *called Reaumur's*, has the two points fixed at 0 and 80 respectively.

It is easy to *reduce them to the same standard*, thus, the distance between the two fixed points in the Centigrade is 100, and in Fahrenheit's is 180. They are to one another as 100 to 180, or as 5 to 9, and so with Reaumur's, &c.

Example II.—The Barometer.

Meaning of word. How constructed. Pressure of atmosphere varies. Scale. Connection between atmospheric pressure and weather. Connection between atmospheric pressure and height. Marks on common barometer.

Is an instrument for measuring the weight or pressure of the air.

Take a glass tube, closed at one end, open at the other, fill it with a liquid, say mercury, put your finger on the open end, reverse it, and plunge the open end into a vessel containing mercury, taking care that no air gets into the tube. Suppose the tube to be 33 or 34 inches in length, will all the mercury in the tube sink down into the vessel? No. Why not? The pressure of the air on the surface of the mercury in the vessel supports the mercury in the tube. What height of mercury will the atmosphere in ordinary circumstances sustain? About 30 inches. In this case, therefore, we have a space of about 3 or 4 inches above the mercury in which there is no air. (Bring out this point clearly.)

The atmosphere does not in all circumstances exert the same pressure. Sometimes the pressure is greater—sometimes it is less. When the pressure increases will it support more or less mercury? Whether, therefore, will the mercury rise or fall—and so when the pressure is less. Thus, the rise or fall of the mercury in the tube is an index to the pressure of the atmosphere at any given time or place. To enable us to read off the difference of pressure thus exhibited, a scale is attached to the barometer. As the mercury in this country never sinks, at the sea level, below 27, or rises above 31, it is not necessary to have more than these marked on the scale. Where the instrument, however, is employed for meteorological purposes, the scale must descend much lower.

Bring out the connection between atmospheric pressure and the state of the weather. When the weather is good, the pressure is greater than when the weather is bad; hence the mercury will stand higher in good than in bad weather. Before a storm the mercury sinks rapidly; hence it is used to indicate the weather; is called a weather-glass. Show its use to the farmer, the sailor, &c.

Show, also, that as we ascend, the pressure of the atmosphere becomes less, and the mercury sinks; hence it is used as a means of determining heights.

Explain the terms which are marked on the common wheel barometer. Show how unsafe it is to trust to them—they often indicate the very opposite of what actually happens.

Example III.—Dew.

Watery vapor. The earth a good radiator. Radiation cools the surface of the earth. Dew formed. Application.

The atmosphere always contains a certain amount of watery vapor. Its capacity for vapor depends on its heat. Cool the atmosphere, it will contain less—increase its heat, it will contain more vapor.

The earth, during the day, when the sun is shining, absorbs a large amount of heat. In the evening, when the sun has set, the earth radiates its heat very rapidly. This radiation soon cools its surface. The air coming in contact with this cooled surface, parts with its caloric to the earth. Its temperature is thus reduced, and, as a consequence, its capacity for watery vapor is diminished.

The vapor it contains is condensed, and is deposited in the form of dew. Illustrate by bringing a cold bottle into a warm room. What happens? The moisture inside the window of a warm room, when it is cold without, &c.

If this be so, where will dew be most readily and most profusely formed? On those substances which radiate heat. Such is the fact. How can you stop the formation of dew? By stopping the radiation. Show how gardeners take advantage of this. Will there be more dew on a clear than on a cloudy night? Why on a clear night?

Example IV.—The Land and Sea Breeze.

Introduction. Land a better absorber of heat than water. Effects produced by its greater absorbing power. Land a better radiator than water. Effects of this. Cause of these breezes.

You have been by the sea-shore—you have been at the bathing. In what direction did you observe the wind blowing in the middle of the day? To the land—from the sea to the land. In the evening, when the sun had set, and when the ground began to cool, in what direction did the wind blow? From the land to the sea.

Bring out clearly the fact that the earth is a better absorber of heat than the sea—that the temperature of the sea remains in all places and at all times far more equable than that of the land. In bathing on a hot day, you must have felt the water cold, and the sand and rocks on the sea-shore almost insufferable hot.

When the sun has risen to some height in the heavens, the earth rapidly absorbs his heating rays, and so becomes warm. The air coming in contact with this heated surface, becomes also heated, is rarefied, and its equilibrium destroyed. How can the equilibrium be restored?—by the accession of cold currents—whence will these come? The sea does not absorb heat so rapidly as the land—its temperature remains more uniform—hence, while the air, resting on the land, is heated and rarefied, that on the sea remains *cold* in comparison—accordingly the cold air from the sea will flow in upon the land to restore the equilibrium.

Again, the earth not only absorbs rapidly, it also radiates its heat very quickly—it parts with it far more rapidly than the sea. Hence, when the sun has set, the earth cools rapidly—becomes colder than the neighboring sea. The air resting on the land partakes of this coldness; and being thus denser than the air resting on the sea, flows in upon the sea, until an equilibrium is restored.

The land and sea breeze is thus produced by the different absorbing and radiating powers of the land and water.

Example V.—Why does Ice float?

Heat expands bodies. Effect of this. Cold contracts, and so renders bodies specifically heavier. We would expect ice to sink. What would happen if ice sunk. Ice floats. Why? The law of contraction is arrested. Wisdom.

Heat expands bodies, and makes them specifically lighter; when, if liquids, they rise to the surface and float. The part of a substance that is lightest floats—thus the cream on milk—the dross in the process of refining, &c.

Cold, on the other hand, as a rule, contracts bodies, and so renders them specifically heavier. Ice is produced by cold, or by the abstraction of heat; and if water continued to contract during the whole process of congelation, the ice, when formed, would be specifically heavier than the under-lying water, and would sink to the bottom. If the cold still continued, a new layer of ice would be formed on the surface, and when formed it would also sink; and so on, layer after layer would form and sink, so long as the cold was sufficient to freeze the water.

Picture out the consequences of this, especially in high latitudes—the rivers and lakes would become one mass of ice, which all the heat of summer would not melt; all life would die, and these part of the earth would become a dreary, icy solitude.

But ice, when formed, does not sink—it floats on the surface of water, like cream on milk, or dross—hence it must be lighter than the under-lying water; but to make it lighter what must have taken place in the process of its formation?—it must have expanded. Here state the remarkable fact, that when water has cooled down to 39½° F., the contracting process is suddenly arrested, and it begins to expand, and continues to expand until it forms into ice—supposed to be owing to the mode in which the crystals of ice arrange themselves.

But whatever the cause of the expansion, the beneficial effects of it are evident enough, and furnish a striking proof of the wisdom and goodness of the all-wise God.

Example VI.—Application of the foregoing Lesson.

HEADS.—1. *a.* Why do water pipes frequently burst in frost?
    b. How may this be prevented?
  2. Danger of allowing water in winter to get into chinks, etc., of buildings. Why?
  3. Show how the principle may account for many of the convulsions of nature.

Example VII.—Locality often determines Custom.

Egypt, its physical features, etc. Seat of empire. Objects of worship. Every people respect their dead. The soil of Egypt unfit for burying in.—Why?—And results of. Entombing in rocks—first results of. Embalming—character of determined by the Egyptian's belief.

Egypt—a long valley formed by opposite ranges of mountains; the river Nile flowing between. Soil naturally dry and sandy. Climate dry and hot—rain seldom falling—its vegetation depending chiefly on the Nile overflowing its banks, thus moistening the soil, and leaving a covering of mud. Its mountains abound with caves, wherein the hyena, jackal, and many other beasts of prey, have their abodes.

Was early, and for a long time, the seat of a great empire. Mention their idolatry—some of the objects of their worship. Many of the native animals, which they embalmed and kept in their temples.

Every people pay great respect to their dead. The Egyptians did so especially. Refer to their belief in the transmigration of souls. The soil, because of its sandy nature, and owing to the dryness of the atmosphere, and prevalent winds, was unfit for the burial of the dead. Why? Wind obliterates the marks of the graves—the hyena and jackal could easily dig up the dead bodies. How the Egyptians would be horrified. Even near cities, which were planted near the Nile, the graves would be obliterated by the mud deposited by the Nile when it overflowed its banks. How would this affect the Egyptians? Set them to find out places of security for their dead. Where could they turn? On either hand mountains looked down on them, displaying caves—lay them there.

They did so. The result—in a few days they could not enter them. Why? the effluvia arising from decomposition caused by the heat of the atmosphere. What then? They must dispose of their dead; and they desired to have them safe, and free from disgusting sights and smells. What then? They knew how to preserve the animals they worshiped—do so with their dead relatives—hence embalming. Train out why they laid out such expenses on embalming—their belief in transmigration of souls. Thus explain the murmuring of the Israelites when Pharaoh's host was behind, the Red Sea in front, and high mountains on either side of them. "Because there were no graves in Egypt, hast thou taken us to die in the wilderness?"—*Exodus* c. xiv. v. 11.

Example VII.—Rice.

Conditions necessary to its growth. Air and light. Heat. Moisture. Where fulfilled Natural region of rice. Mode of culture. Nature of fruit. Nations who live on rice. How prepared for food.

Assume as known the general fact that vegetables require light, air, heat and moisture. In all parts of the earth the first two conditions are fulfilled, and, in so far as they are concerned, all plants might grow every where. But in addition to air and light, rice requires a certain amount of heat and moisture.

It will not thrive well unless there be a summer temperature of at least 73°4 of Fahrenheit. This at once fixes its locality to a certain extent. (Mark off on the map the countries which have this temperature—*i. e.* those lying about 40° on each side of the equator, more or less according to those circumstances which determine climate.)

But even within these limits it will not grow every where—*e. g.* not generally in the west of Asia, in Persia, Arabia, &c. Why? Because, although there is a sufficient amount of heat, there is not sufficient moisture. A great abundance of water is necessary to its growth. This is found in the S. E. of Asia, the Indian Peninsulas, China, Japan, United States, Italy, and certain parts of Africa—hence the rice will grow in these districts.

We have thus the habitat of rice—but even in the districts mentioned, where we have all the conditions specified, rice will grow in certain quarters better than in others. Bring out the fact that each plant has a natural locality, where it flourishes best.

Show how it requires to be covered with water—where the rivers do not naturally overflow their banks, and how is this done? By irrigation. Refer to the vale of Lombardy and the Po. Picture out the scene. Show how long it remains under water—in the ground—mode of reaping, &c.

It produces a greater return in proportion to the ground under cultivation than any other grain, but this is counterbalanced by the fact that it contains a larger amount of starch and a less amount of gluten than any other grain—consequently, bulk for bulk—it is less stimulating and nutritious. It is also destitute of fatty substances, so that, like all substances consisting chiefly of starch, it is not well fitted, if used alone, to support life, although it is very advantageous and economical when forming a portion of the food of man.

What nations live on rice—what is, in general, their disposition? Can you trace any connection between their soft, dull, phlegmatic temperament, and the food on which they live.

This part would, of course, be given to girls—our fair readers can easily supply the necessary notes.

Example IX.—The Cotton Plant.

HEADS.—1. Conditions necessary to its growth.
2. Where fulfilled.
3. How grown.
4. How prepared for manufacture.
5. Its importance to Britain, and the desirableness of having a supply from our own Colonies.
6. In which of them might it be profitably cultivated.

Example X.—Oceanic Currents.

HEADS.—1. Effects of heat on waters of the ocean.
2. Effect of earth's diurnal revolution.
3. Combined effects of these two influences.
4. Effects of interposition of masses of land, &c.
5. Trace these various effects in one known current.

18. We have already, in the chapter on Geography, given a list of subjects suitable for oral lessons in the third stage. Similar lessons should be given on the various points of natural science. We shall specify a few as mere examples.

Lessons on HEAT—
Communication of heat.
Conduction of heat.
Radiation of heat.
What bodies radiate best?
Distribution of heat.
How may heat be distributed?
Absorption of heat.
What kind of clothes most suitable for summer and winter wear?
Expansion and contraction.
Thermometer.
Liquefaction.
Vaporation.
Elasticity of steam—Steam Engine.

Lessons on MECHANICS—
Levers—Practical examples of.
Wheel and axle.
Pulleys—Advantages of.
Inclined Plane, Wedge, Screw } Practical examples of.

Lessons on PNEUMATICS—
Elasticity of Air.
Pressure of Atmosphere.
Air Pump—Common Pump—Forcing Pump.
Fire Engine, &c.
Philosophy of draughts—evil effects of—prevention, &c.

Lessons on OPTICS—

Reflection and Refraction of light.
Description of the eye—use of spectacles, &c.
Telescope—Microscope—Magic Lantern, &c.

As examples of lessons of a miscellaneous description, we may subjoin the following:—

Ventilation—of private dwellings—public buildings, &c.
Evils of bad ventilation—dry rot—fire damp, &c.
Why is it dangerous to drink cold water when the body is much heated?
Why is it dangerous to bathe when the body is much heated?
The circulation of the blood.
The connection between health and a constant supply of pure air.
Where ought a bed to be placed—near the floor or at some distance from it.

The earnest teacher can easily find subjects of lessons suitable for every stage of progress. The more common the objects are, the better, as they will thus appeal more directly to the interest of the children, and will tend to make them acquainted with the concerns of every-day life.

XIV. LESSON ON COLOR.

BY D. R. HAY.

THERE are three distinct kinds of color in nature, viz., yellow, red, and blue. The first is most allied to light, and is a color having no characteristic tone; the second is characterized by warmth of tone; and the third by coolness of tone. Yellow, red, and blue, are called the primary colors, because out of their various modes of combination all other colors, either in nature or art, are produced. The three colors which arise from the binary union of these primary colors are orange, purple, and green, orange being composed of yellow and red—purple, of red and blue—and green of blue and yellow; they are therefore called secondary colors. All other colors in nature and art arise from the union of the whole three primary colors, under an infinite variety of modifications, in respect to the relative proportions in which they are combined.

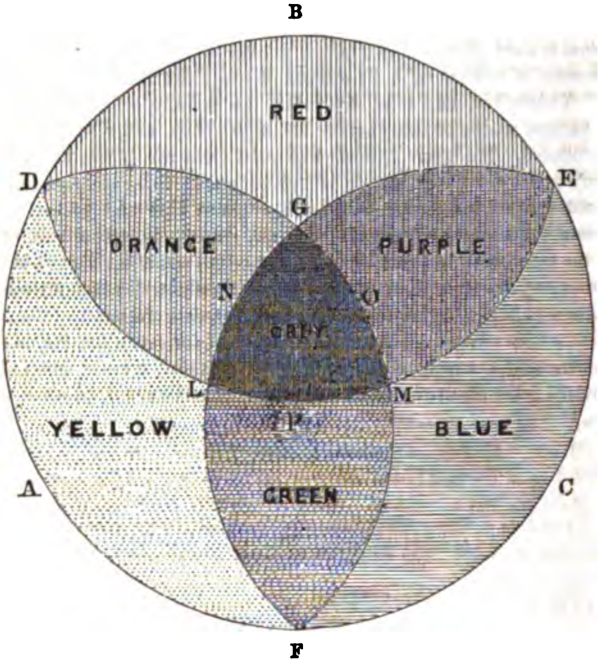
White and black represent light and darkness, and are not therefore considered as colors. When yellow, red, and blue, of corresponding intensities, are united together in equal quantities, a neutral gray, similar to the union of white and black, is the result; because it is the nature of these colors, when in triple union, to neutralize each other.

These simple facts would clearly exhibit themselves in a diagram constructed like the accompanying one (but without the dotting and straight lining by which color is there represented,) by coloring the space within the two curved lines D A F and D O F with pure yellow—the space with the similar lines D B E and D P E with pure red—and the space within the similar lines E C F and E N E with pure blue.

The colors thus put together must be of equal intensity, and quite transparent. Gamboge yellow, crimson lake, and Prussian blue, are quite suitable for ordinary purposes of this kind. Each color should be thoroughly dry before the other is put on, and then applied quickly in order to prevent the washing up of those first laid on. By this means the space D A F L remains yellow, D B E G red, and E C F M blue, while the space D G L is orange color, E G M purple, F L M green, and the center space G L M gray, all arranged in harmonious order, both as to that of succession and union.

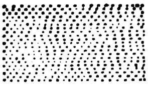
The primary and secondary colors follow each other in the order of a primary and secondary alternately, as in the rainbow. The yellow, which being neutral as to tone unites with the warm-toned red on the one side in the production of orange, and on the other side with the cool-toned blue in the production of green, while the red and blue neutralize their respective warmth and coolness in the production of the secondary purple. The manner in which the most powerful harmonies of color occur within this circle is as follows:—on the line A E we find opposed to the neutral-toned primary color yellow, the secondary color purple, in which the warm-toned primary color red, and the cool-toned primary color blue, have mutually neutralized each other, and thereby constituting purple, the true harmonic accompaniment to yellow. On the line B F, we find opposed to the warm-toned primary color red, the secondary color green, in which the cool-toned primary color blue is united with the neutral-toned primary color yellow, thus constituting green, the true harmonic accompaniment to red. On the line D C, we find opposed to the cool-toned primary color blue, the secondary color orange, in which the warm-toned primary color red is united with the neutral-toned primary color yellow thus constituting orange color, the true harmonic accompaniment to blue.

DIAGRAM OF COLORS.

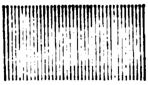


The primary colors may be represented as follows:—

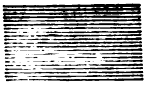
Yellow by



Red by



Blue by



The contrast between each of these three pairs of harmonizing colors, is relieved by the neutral gray which occurs in the space G L M.

These varieties of tone in the three primary colors thus produce that harmony to which the eye responds with so much delight when dwelling upon the beauties of nature; and a proper knowledge of this species of harmony would enable us to render truly beautiful many of the most simple products of our labor.

XVI. BOOK NOTICES.

HISTORY OF THE CHURCH OF CHRIST IN CHRONOLOGICAL TABLES. By H. B. Smith, D. D. Scribner, 124 Grand Street, New York.

In these Synchronistic Tables, Dr. Smith has given us the best condensed view of the history of the Christian Church, with the great events of contemporaneous secular history, and the state of literature, philosophy and culture, which we have seen brought together in a single volume, or made available for immediate reference. Nothing but a personal examination can give the scholar and general reader an idea of its comprehensiveness and accuracy. Fourfold the cost of this work ($6.00,) will not bring together so much valuable matter—and then to get the same facts for any one period will require the consultation of a dozen volumes at an expense of time, and comparison of dates and statements, which but few readers can afford to give. We have examined this work with admiration, and gratitude to the learned author.

COLTON'S SCHOOL ATLAS. New York: Iverson, Phinney & Co.

These are the best specimens of Maps for School purposes which we have seen from the American press. In clearness, accuracy, and elegance, they will compare favorably with the recent German publications of Vogel, and Ritter.

EATON'S PRIMARY ARITHMETIC. Boston: Brown & Taggard.

This is a Gem of school book typography and appropriate illustration. And the matter seems worthy of the style of publication. Author and publisher deserve the gratitude of teacher and pupils for the manner in which this work is got up.

SELF-HELP. By Samuel Smiles. Boston: Ticknor & Fields.

This is one of the best books we have ever read to inspire a love of reading, study and work, and to cultivate habits of diligence, decision and perseverance. It should be read by pupil and teacher—the worker with the hands, as well as the worker with the brain—and be placed in every library, public and private.

THE NEW AMERICAN CYCLOPEDIA. Vol. X. New York: D. Appleton & Co., 443 Broadway.

Each new volume extends the range of reference, and makes us long for an early completion of the set. It answers more inquiries, stated in our reading and conversation, than any similar work.

GUIZOT; MEMOIRS OF MY OWN TIME. Vol. III., London.

We have in this volume a very interesting account of this great Minister's administration of the Department of Public Instruction in France, during the reorganization, or rather the institution, of the present system of Primary Schools. We shall transfer a large portion of it to a future number of this Journal.

SCOTT'S AMERICAN REPRINTS OF THE LONDON, EDINBURGH, NORTH BRITISH, AND WESTMINSTER QUARTERLY REVIEWS, AND BLACKWOOD'S MONTHLY MAGAZINE, come to us punctually within a few days after the English copy reaches our shores, each with rich and varied contents, keeping us abreast with the literary world on the other side of the Atlantic. Almost every number contains one or more articles specially interesting to the teacher and educator, and the general reader can always find something new and instructive.

WASHINGTON IRVING'S WORKS. *National Edition.* New York: G. P. Putnam, Agent, 115 Nassau Street.

We have before us specimen volumes (*Knickerbocker's New York, Sketch Book, Life of Washington*, Vol. I.,) of this fine edition of our National Classic. They are beautifully printed on heavy tinted paper, and substantially bound in beveled boards. This edition will be sold exclusively to subscribers, and will be issued in Monthly volumes. Price, $1.50 each.

CARLYLE'S ESSAYS. 4 vols. Boston: Brown & Taggard, 25 Cornhill.

This edition has been revised and corrected by the author, of whom there is a Portrait which is the best likeness we have seen. It is printed on the finest tinted paper, and has a copious index. There can be no better library edition.

THE WHITE HILLS. By Thomas Starr King. Boston: Crosby, Nichols, Lee & Co. p. 403.

A capital book both for the matter and the manner of its getting up. In typographical elegance, it is one of the handsomest issues of the American press, and for it æsthetic teaching, its graphic power in making travel and natural scenery minister to the development of taste, science and religion, the volume deserves a permanent place in our public and private libraries.

LECTURES ON THE ENGLISH LANGUAGE. By G. P. Marsh. New York: Scribner, 124 Grand Street.

This is one of the most valuable contributions to the thorough understanding of the English language—at once fascinating and instructive to the philologist and the general student. It has already done good service in turning the attention of teachers to a much neglected study in all our schools. Why do not our lexicographers enlist the critical and profound scholarship of this author in the revised editions of their dictionaries?

PECK'S GARNOT'S POPULAR PHYSICS. New York: A. S. Barnes & Burr.

Prof. Peck has given our High Schools and Academies, in his edition of the French Author, an admirable introduction—clear, logical, and illustrated—to the principles of Natural Philosophy in their wide applications to the useful arts, and to daily experience.

FASQUELLE, (LOUIS,) NEW METHOD OF LEARNING THE FRENCH LANGUAGE. Revised. New York: Iverson, Phinney & Co. 1860.

We have found Prof. Fasquelle's "Method," and his Course, generally what he claims for them, "a plain and practical way of acquiring the French Language."

THE TEACHER'S MANUAL OF METHOD, OR THE GENERAL PRINCIPLES OF TEACHING AND SCHOOL-KEEPING, WITH ILLUSTRATIVE EXAMPLES. By W. Ross. London: Longman. 1858. p. 212.

THE PRINCIPLES AND PRACTICE OF EARLY AND INFANT SCHOOL EDUCATION. By J. Currie. Edinburgh: Constable & Co. p. 310.

MANUAL OF SCHOOL MANAGEMENT. By T. Morrison. Glasgow: Hamilton. p. 356.

PASS AND CLASS: AN OXFORD GUIDE BOOK. By M. Burrows. London: Parker. p. 256.

THEORY AND PRACTICE OF NOTES OF LESSONS. By J. Jones. London: Sompkin, Marshall & Co. p. 136.

LANGUAGE AS A MEANS OF MENTAL CULTURE AND INTERNATIONAL COMMUNICATION; OR, MANUAL OF THE TEACHER AND LEARNER OF LANGUAGES. By C. Marcel. London: Chapman & Hall. 2 vols.

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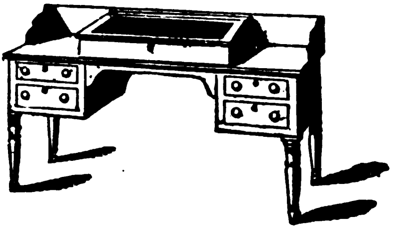

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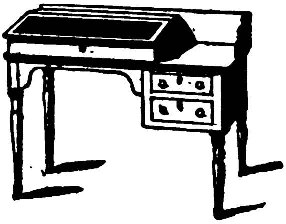

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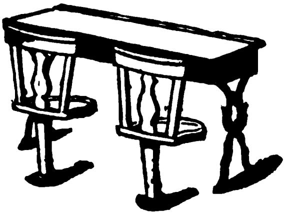

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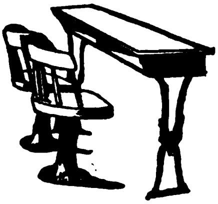

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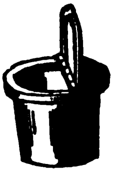

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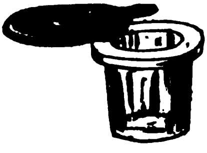

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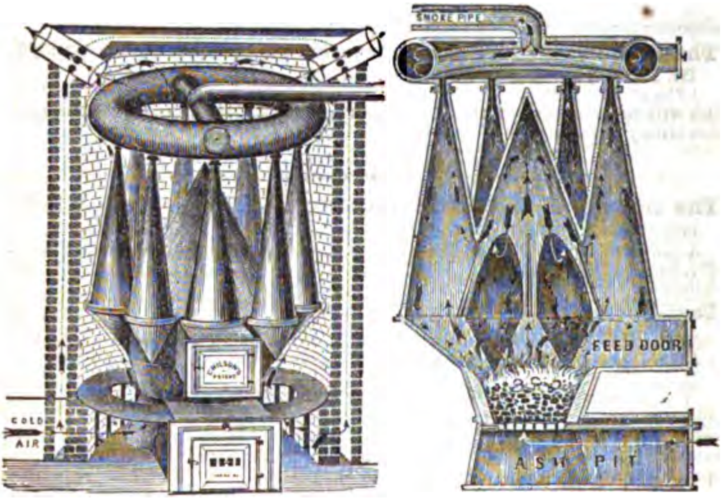

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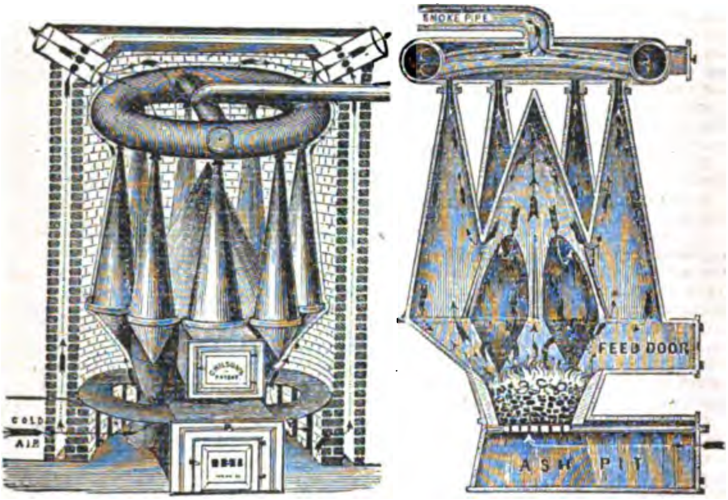

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HENRY BARNARD,
Editor and Proprietor.

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Thomas Greene

I. THOMAS DOWSE.*

THOMAS DOWSE, whose devotion to books under circumstances generally deemed unfavorable to culture of literary tastes, was often cited† during his lifetime to stimulate youth and laboring men to form the habit of reading, and whose name is now inseparably associated with several literary institutions established or enriched by his benefactions, was born at Charlestown, Mass., on the 28th of December, 1772, and died in Cambridgeport, on the 4th of November, 1856.

His father, Eleazer Dowse, was a leather dresser, and was driven with his family from Charlestown on June 17, 1775, his house being one of those destroyed by the conflagration of that day. After a short time passed at Holliston, he established himself at Sherborn, a small town in Middlesex county, the original seat of the family, and there resumed his occupation as a leather dresser. At the age of six, Thomas was severely injured by a fall from a tree; and a rheumatic fever setting in before he had recovered from the effects of this accident, a lameness resulted which continued, with frequent attacks of severe pain, through life. At the proper age, Thomas began to work with his father, at his trade on the farm; forming at the same time a taste for reading, which he indulged with so much eagerness that, by the age of eighteen, he had read all the books he could procure in Sherborn. All his little earnings were expended in the purchase of books. He had no education but what could be obtained at the town school. He continued to live at home as an apprentice to his father till he had attained his majority. He was then seized with a desire to visit foreign countries. A neighbor of his father's, who commanded a vessel that traded from Norfolk in Virginia to London, offered him a free passage; he was, however, to reach Norfolk at his own expense. Too poor to accompany the captain by land, he engaged a passage in a coasting vessel from Boston. Head winds prevented the departure of the coaster till the vessel had sailed from Norfolk, and thus Thomas Dowse lost the opportunity of visiting foreign countries. Another never presented itself. He immediately sought employment in the business in which he had been brought up, and entered the service of Mr. Wait, a leather dresser and wool puller at Roxbury, Mass., at $12 a month wages. His pay was afterwards raised to $25. He remained in this employ ten years. He once informed a friend that at the age of twenty-eight his highest income was $25 a month; that he had never paid $5 for conveyance from one place to another, never owned a pair of boots, and was then the possessor of several hundred volumes of good books well bound. In 1803, he set up in business at Cambridgeport, with the assistance of Mr. Wait, who advanced the capital and shared the profits. This partnership was dissolved at the end of the year; after which Mr. Dowse carried on the business of a leather dresser, wool puller, and glover, at first with a succession of partners, and afterwards alone, till he was far advanced in life. His business was successful, and the articles manufactured by him enjoyed the reputation of being the best of their kind in the market. In 1814, he erected a large and commodious dwelling-house and shop in Cambridgeport, and laid out two or three acres as a garden; and here he lived unmarried the rest of his days. From the earliest period he devoted a large part of his income to the purchase of books. The working hours of the day were devoted to his shop or business connected with it; but the early morning and the evening hours were employed in reading. He thus acquired an intelligent knowledge of the contents of his steadily increasing library. Having formed a taste, not only for good books but for handsome editions, in which the American press was then greatly deficient, he was accustomed to import them directly from London. About the year 1820, his agent in England sent him the prospectus of a lottery for the disposal of the sets of a costly collection of engravings of the most famous works of the old masters, and of the water-color copies made from the originals, for the purposes of this publication. Mr. Dowse bought three tickets in this lottery, and drew two prizes, one prize consisting of two sets of the engravings, colored and uncolored; the other prize being half of the water-color copies framed, fifty-two in number. He thus became possessed of a large collection of admirable copies of some of the most celebrated paintings in England. In the judgment of Mr. Washington Allston, it afforded ampler means for the study of art than were elsewhere to be found at that time in the United States. The paintings were advantageously arranged in rooms adjoining Mr. Dowse's library, and formed with it an attraction of steadily increasing interest to men of letters and taste resident in the neighborhood, and to strangers. Mr.

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* Abridged from a Discourse, by Hon. Edward Everett, at the opening of the Dowse Institute in Cambridgeport, and before the Massachusetts Historical Society.

† *See* Note at the close of this Memoir.

Dowse's bodily infirmity unfitted him for much active intercourse with society, and his disposition naturally inclined him to retirement and solitary occupation. He abstained from public life in all its forms, and though a diligent reader, committed nothing to writing. He continued to work at his trade till after he was seventy years of age; but for the last ten years of his life, though his shop remained open in the lower story of his dwelling, the business was conducted by persons in his employ. Of the eminent men whom the country has produced, Franklin was one of the special objects of Mr. Dowse's admiration. Toward the close of his life he expressed this sentiment by the erection, at his own expense, of a substantial granite obelisk at Mount Auburn, by the side of his own tomb. With the exception of the statue of Franklin presented by Mr. Bingham to the public library at Philadelphia, and the urn in Franklin place, Boston, which is rather an ornamental than a commemorative work, the obelisk erected by Mr. Dowse is believed to have been the first monument dedicated to the memory of Franklin in the United States.

Giving his hours of labor to his trade, and those of relaxation to his books, his pictures, and his garden, Mr. Dowse lived on to a serene, contented, unaspiring and venerable age; exhibiting a beautiful example of the triumph of a calm and resolute spirit over what are usually regarded as the most adverse outward circumstances.

A supposed invincible necessity of our natures has, in our modern society, almost separated the mechanical from the intellectual pursuits. A life of manual labor and business cares has usually been found (less perhaps in our country than in most others) to be inconsistent with the cultivation of a taste for literature and art. It is generally taken for granted, that, for this purpose, means and leisure are required, not within the reach of those who live by the labor of the hands. Hence society, speaking in general terms, is divided into two classes—one engrossed with manual labor or business cares, and suffering for want of a due culture of the mental powers; the other employed in pursuits that task the intellect, without calling into play the wonderful faculties of our material frames. The result in too many cases gives us labor without refinement, and learning without physical development. Such was evidently not the design of our nature. Curiously, wondrously compounded of soul and body, it was meant to admit the harmonious and sympathetic development of the material and intellectual principle: rather let me say, its attainable highest excellence can exist only when such development takes place. It is quite evident, that, as far as that object is attainable, labor should be ennobled and adorned by the cultivation of intellectual tastes and the enjoyment of intellectual pleasures; while those whose leading pursuits are of a literary or scientific character ought to inure themselves to exercises, occupations, and sports, which strengthen the frame, brace the muscles, quicken the senses, and call into action the latent powers of our physical nature.

It has ever appeared to me that Mr. Dowse's life and career were replete with instruction in this respect; in which, indeed, he is entitled to be regarded as a representative man. Few persons, as we have seen, above the dead level of absolute penury, start in life with such slender advantages of position and outfit. He inherits no fortune, he enjoys no advantages of education. From the age of six years, he labors under a serious physical infirmity. The occupation he has chosen furnishes no facilities for the cultivation of the mind over most other mechanical trades; and, till he has advanced to the age of fifty, nothing that can be called a piece of "good luck" occurs to give an impulse to his feelings. But, under these certainly not propitious circumstances, he forms a taste for books and for art such as is usually displayed only by persons of prosperous fortune; and he provides himself, by the labor of his hands, with ampler means for gratifying those tastes than are often employed by the affluent and the liberal. If his example proves the important and salutary truth, that there is no incompatibility between manual labor and intellectual culture, the rarity of the example shows with equal plainness how firm was the purpose, how resolute the will, which enabled him to overcome the difficulties of such a course. We can fancy the unspoken reflections that may sometimes have passed through his mind as he leaned over his work-bench. We can imagine, that in his hours of solitary labor, and at the commencement of his career, he sometimes said to himself, "These halting limbs and this enfeebled frame shall not gain the mastery. If I can not move with vigor in the active and busy world, much more shall these hard-working hands provide me the means of mental improvement. Poverty is my inheritance: I know from the cradle the taste of her bitter but wholesome cup; but I will earn for myself the advantages which fortune sometimes in vain showers on her favorites. A resolute purpose shall be my patrimony; a frugal life, my great revenue. Mean may be the occupation, hard and steady the toil; but they shall not break nor bend my spirit. It has not been given me to pass the happy days of emulous youth in the abodes of learning, or to sit at the feet of the masters of science and literature; but, if Providence has denied me that privilege which most I should have coveted, it has granted me a love of letters not always brought from academic halls. The wise of every country and age shall teach me from the shelves of my library; the gray dawn and the midnight lamp shall bear witness to my diligence; at the feet of the great masters I will educate myself."

Of the religious opinions of Mr. Dowse I have no personal knowledge. I have reason to believe, from reliable information, that he cherished a profound traditionary respect for the Christian Revelation; and that, having pursued a course of manly inquiry, he had settled down upon a rational faith in those prominent doctrines which unite the assent of most professing Christians. He admired the Liturgy of the church of England; and it was in presumed conformity with his wishes in this respect, that the solemn and affecting service for the burial of the dead was performed at the door of his tomb, amid the falling leaves of November.

He had constantly on his table, during the latter months of his life, a copy of the Liturgy compiled a few years since, by Hon. David Sears, from the liturgies of the leading branches of the Christian church; a truly significant expression of that yearning for union, which is cherished, as I think, by sincere and earnest men throughout Christendom. I am inclined to the opinion, that, without dogmatizing, he leaned to the ancient formularies of belief, as they were received by the liberal clergy of the last quarter of the eighteenth century and the first quarter of the nineteenth; not following opinion to the extremes to which it has more recently been carried. I believe that he felt devoutly, speculated modestly and sparingly, and aimed to give proof of Christian principles by Christian word and deed; covering up the deep things of religion in a thick-woven veil, of which awe of the Infinite was the warp, humility the woof, love the bright tincture; and which was spangled all over with the golden works of justice and mercy. The queen of New England's rivers flows clear and strong through her fertile meadows; the vaporous mists of morning hang over her path: but the golden wealth of autumn loads her banks and attests her presence. In like manner, the stream of practical piety flowed through the heart and conduct of our departed friend; but the fleecy clouds of silent reverence hovered over the current, and a firm and rational faith was principally manifested, not in sectarian professions, but in a chastened temper, a pure conversation, and an upright life.

As Mr. Dowse was childless, the final destination of his library was a matter of some curiosity among those acquainted with its value. A few months before his death he formed the resolution to present it to the Massachusetts Historical Society; and on July 30, 1856, the formal transfer was made. The library, however, was left by the society in the possession of Mr. Dowse during the brief remainder of his life. It consisted of about 5,000 volumes of a miscellaneous character, generally in good, often in elegant bindings, and of the best editions. It is almost exclusively an English library, though containing translations of the principal authors in the ancient languages, and the cultivated languages of modern Europe. It is estimated to have cost Mr. Dowse $40,000 without interest. After his death the library was deposited in the Historical Society's building, in an inner room fitted up for the purpose, and arranged in tasteful cabinets at a cost of $3,000 advanced by his executors, in addition to a sum of $10,000 also given by them as a permanent fund for the conservation and care of the library. Mr. Dowse in his will made provision for his relatives to the extent of $25,000. The residue of his property, amounting to about $40,000, was placed at the disposal of his executors, to be by them appropriated to literary, scientific, or charitable purposes. The collection of water-colors was given by them to the Boston Athenæum, where it is displayed in an apartment exclusively devoted to that purpose. Handsome donations have been made by the executors to the botanic garden of the university at Cambridge, and to other meritorious public objects in Cambridge and Boston.* The Dowse High School has been founded by them at Sherborn, where he passed his youth and learned his trade; and the Dowse Institute established at Cambridgeport, in the immediate vicinity of his residence.

NOTE.

The following allusion to Mr. Dowse by Mr. Everett, in a Lecture in the *Franklin Course* in Boston, in 1831, has often been cited as an encouragement to workingmen to collect and study books.

I scarce know if I may venture to adduce an instance, near home, of the most praiseworthy and successful cultivation of useful knowledge on the part of an individual, without education, busily employed in mechanical industry. I have the pleasure to be acquainted, in one of the neighboring towns, with a person who was brought up to the trade of a leather dresser, and has all his life worked, and still works, at his business. He has devoted his leisure hours, and a portion of his honorable earnings, to the cultivation of useful and elegant learning. Under the same roof which covers his workshop, he has the most excellent library of

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* Boston Athenæum—Gallery of Water Colors,	$5,000
To Massachusetts Historical Society—Permanent Fund,	10,000
" " " Library,	40,000
" " " for fixtures of room,	3,000
City of Cambridge for Course of Lectures,	10,000
Massachusetts General Hospital,	5,000
Asylums for Aged Indigent Females,	5,000
Town of Sherborn for High School,	5,000
Harvard College for Botanic Garden,	2,000
Other Public Objects,	12,000

English books, for its size, with which I am acquainted. The books have been selected with a good judgment, which would do credit to the most accomplished scholar, and have been imported from England by himself. What is more important than having the books, their proprietor is well acquainted with their contents. Among them are several volumes of the most costly and magnificent engravings. Connected with his library is an exceedingly interesting series of paintings in water-colors—copies of the principal works of the ancient masters in England, which a fortunate accident placed in his possession—and several valuable pictures purchased by himself. The whole forms a treasure of taste and knowledge, not surpassed, if equaled, by any thing of its kind in the country.

Mr. George B. Emerson cited the example of Mr. Dowse in an Address at a School Festival in Salem in 1842.

For many years, and many times in a year, I have passed by the shop of a diligent, industrious mechanic, whom I have often seen busy at his trade, with his arms bare, hard at work. His industry and steadiness have been successful, and he has gained a competency. But he still remains wisely devoted to his trade. During the day, you may see him at his work, or chatting with his neighbors. At night, he sits down in his parlor, by his quiet fireside, and enjoys the company of his friends. And he has the most extraordinary collection of friends that any man in New England can boast of. William H. Prescott goes out from Boston, and talks with him about Ferdinand and Isabella. Washington Irving comes from New York, and tells him the story of the wars of Grenada, and the adventurous voyage of Columbus, or the Legend of Sleepy Hollow, or the tale of the Broken Heart. George Bancroft sits down with him, and points out on a map the colonies and settlements of America, their circumstances and fates, and gives him the early history of liberty. Jared Sparks comes down from Cambridge, and reads to him the letters of Washington, and makes his heart glow with the heroic deeds of that godlike man for the cause of his country. Or, if he is in the mood for poetry, his neighbor Washington Allston, the great painter, steps in and tells him a story—and nobody tells a story so well—or repeats to him lines of poetry. Bryant comes, with his sweet wood-notes, which he learnt among the green hills of Berkshire; and Richard H. Dana, father and son, come, the one to repeat grave, heart-stirring poetry; the other to speak of his *two years before the mast*. Or, if this mechanic is in a speculative mood, Prof. Hitchcock comes to talk to him of all the changes that have befallen the soil of Massachusetts, since the Flood and before; or Prof. Espy tries to show him how to predict a storm. Nor is his acquaintance confined to his own country. In his graver hours, he sends for Sir John Herschel from across the ocean; and he comes and sits down, and discourses eloquently upon the wonders of the vast creation—of all the worlds that are poured upon our sight by the glory of a starry night. Nor is it across the stormy ocean of blue waves alone that his friends come to visit him; but across the darker and wider ocean of time come the wise and the good, the eloquent and the witty, and sit down by his table, and discourse with him as long as he wishes to listen. That eloquent blind old man of Scio, with beard descending to his girdle, still blind, but still eloquent, sits down with him, and, as he sang almost three thousand years ago among the Grecian isles, sings the war of Troy or the wanderings of the sage Ulysses. The poet of the human heart comes from the banks of Avon, and the poet of Paradise from his small garden-house in Westminster; Burns from his cottage on the Ayr, and Scott from his dwelling by the Tweed. And any time these three years past may have been seen by his fireside a man who ought to be a hero with school-boys, for no one ever so felt for them; a man whom so many of your neighbors in Boston lately strove in vain to see—Charles Dickens. In the midst of such friends, our friend the leather dresser lives a happy and respected life; not less respected, and far more happy, than if an uneasy ambition had made him a representative in Congress, or a governor of a state; and the more respected and happy that he disdains not to labor daily in his honorable calling.

My young friends, this is no fancy sketch. Many who hear me, know, as well as I do, Thomas Dowse, the leather dresser of Cambridgeport; and many have seen his choice and beautiful library.

MONUMENT TO FRANKLIN.

Toward the close of his life, and when no selfish end could be promoted by the unavoidable notoriety of the act, Mr. Dowse stepped out of the charmed circle of his diffidence to make a very significant public demonstration of his interior sentiment; not by the methods which most win the gratitude of society, or, what is often mistaken for it, the applause of public bodies; not by donations to public institutions or fashionable charities; but by a most expressive tribute of respect to the honored, the irresponsive dead. Franklin had always been one of his chief favorites among the great men of America. The example of the poor apprentice, of the hard-working journeyman printer, who rose to the hights of usefulness and fame, and often cheered the humble leather dresser, as it has thousands of others similarly situated, in the solitary and friendless outset of his own career. The teachings of the philosopher of common sense had found a clear echo in his practical understanding: and so, at the close of his life, he pronounced the eulogy of the great man whom he so highly honored and warmly appreciated; not in the fleeting breath of well-balanced phrases, but in monumental granite. Mr. Dowse's eulogy on Franklin was pronounced in the following inscription, placed upon the side of the obelisk, in which all the prominent points in the character of the great man to whom it is consecrated are indicated with discrimination, and nothing appropriate to the place is omitted but the name of the venerable and modest admirer, by whom this expensive and abiding tribute of respect was paid:—

TO THE MEMORY
OF
BENJAMIN FRANKLIN
THE PRINTER
THE PHILOSOPHER
THE STATESMAN
THE PATRIOT
WHO
BY HIS WISDOM
BLESSED HIS COUNTRY AND HIS AGE
AND
BEQUEATHED TO THE WORLD
AN ILLUSTRIOUS EXAMPLE
OF
INDUSTRY
INTEGRITY
AND
SELF-CULTURE
BORN IN BOSTON MDCCVI
DIED IN PHILADELPHIA MDCCXC

The manner in which Mr. Dowse proceeded in the erection of a monument to Franklin was as remarkable as the act itself. It was eminently characteristic of the man. He raised no committee; levied no contributions on the weary circle of impatient subscribers, who murmur while they give; summoned no crowd to witness the laying of the corner-stone; but, in the solitude of his library, projected, carried on, completed, and paid for the work. With the exception of the urn in Franklin Place—a matter of ornament rather than commemoration—the first monument raised to the immortal printer, philosopher, and statesman—one of the brightest names of his age—was erected by the leather dresser of Cambridgeport.

THE DOWSE LIBRARY.

A short time before his death, Mr. Dowse caused a few copies of a catalogue of his library to be printed for private distribution. It is contained in an octavo volume of two hundred and fourteen pages. The number of works entered in the catalogue is two thousand and eight, and the estimated number of volumes is not less than five thousand; all decently, many elegantly, a few magnificently, bound. They are, for the most part, of choice editions, where a choice of editions exists. A fair proportion of them are specimens of beautiful typography; a few of them works of bibliographical luxury and splendor. It is an English library. Mr. Dowse was not acquainted with the ancient or foreign languages; and as it was formed not for ostentation, but use, it contained but a few volumes not in the English tongue. In running over the catalogue cursorily for this purpose, I find nothing in the Greek language, and but a single work in Latin, and that not an ancient author,—a volume of De Bry's collection of voyages; and nothing in any foreign languages but the works of the three great masters of sacred oratory in French—Bossuet, Bourdaloue, Massillon; in all, seventy-two volumes. These, with the addition of the voyage of Father Marquette, who, first of civilized men, descended the Mississippi, from its junction with the Wisconsin to the Arkansas, were the only books in a foreign language contained in Mr. Dowse's library—the last being a present.

But, though he confined his library almost exclusively to the English language, it was enriched with the best translations of nearly all the classical writers of Greece and of Rome, as well as of several of the standard authors of the principal modern tongues. Thus his shelves contained translations of Homer, Hesiod, the minor lyric and elegiac poets, Pindar, Theocritus, Æschylus, Sophocles, Euripides and Aristophanes, Plato and Aristotle, Philostratus, Epictetus, Marcus Antoninus, Demosthenes, Herodotus, Thucydides, Xenophon, Arrian, Diodorus Siculus, Dionysius of Halicarnassus, Polybius, Plutarch, Pausanias, Dio Chrysostom, Longinus, Aristænetus, Anacreon, Lucian, Porphyry, and the Emperor Julian. From the Latin he had translations of Lucretius, Virgil, Ovid, Horace, Catullus, Tibullus, Lucan, Claudian, Juvenal, Persius, Plautus, Terence, Cæsar, Sallust, Livius, Tacitus, Suetonius, Justin, Cicero, Quintilian, Seneca, Pliny the Younger, and Apuleius. Among German writers he had translations of the principal works of Klopstock, Wieland, Goethe, Schiller, of Norden, Niebuhr, father and son, Johannes von Müller, Heeren, Otto Müller, Raumer, Ranke, Mendelssohn, Kant, the two Schlegels, Menzel, Heinrich Heine, and Weber. From the Italian language he had translations of Dante, Petrarch, Boccaccio, Ariosto, Tasso, Guarini, Marco Polo, Machiavelli, the Memorials of Columbus, Guicciardini, Clavigero, Botta, Lanzi, and Metastasio. Of French authors he had translations of the old Fabliaux, De Comines, Froissart, Monstrelet, Rabelais, Montaigne, Pascal, De Retz, De la Rochefoucault, Fénélon, Racine, Lafontaine, Molière, Madame de Sévigné, Boileau, De la Salle, La Hontan, Rapin, Bayle, Rollin, Montesquieu, Bossu, Charlevoix, Voltaire, Rousseau, Grimm, Vertot, the Abbé Raynal, St. Pierre, De Vaillant, Volney, Brissot de Warville, De Chastellux, Marmontel, Barthelemi, Necker, Madame de Staël, Madame Roland, Mirabeau, Chénier, Chateaubriand, La Roche Jacquelein, Baron Humboldt, Sismondi, Guizot, De Tocqueville, Lamartine, and Béranger. In Spanish and Portuguese he had Cervantes, Cortez, Gomara, Bernal Diaz, Las Casas, De Soto, De Solis, Garcilasso do la Vega, Herrera, Mariana, Molina, Quevedo, Ulloa, Cabrera, Alcedo, and Camoens. It is scarcely necessary to add to this, I fear, tedious recital of names, that it was evidently Mr. Dowse's intention, as far as it could be effected through the medium of translations, that his shelves should not only contain the works of the master-minds of every language and age, but also a fair representation of the general literature of the ancient and modern tongues.

But it was, of course, upon his own language that he expended his strength; for here he was able to drink at the fountains. Putting aside purely scientific, professional, and technical treatises—in which, however, the library is not wholly deficient—it may be said to contain, with a few exceptions, the works of nearly every standard English and American author, with a copious supply of illustrative and miscellaneous literature, brought down to within a few years of his death, when, under the growing infirmities of age, he ceased to add to his collection. No one department appears to predominate; and it would be impossible to gather, from the choice of his books, that his taste had even strongly inclined to any one branch of reading beyond all others. He possessed the poets and the dramatists, from the earliest period to the present day (more than three pages and a half of the printed catalogue are devoted to Shakspeare and his commentators;) a fine series of the chroniclers; the historians and biographers; the writers and collectors of voyages and travels, among which is the beautiful set of Purchas's Pilgrims, one volume of which was selected as the earnest volume of the donation of his library to the Historical Society; the philosophers, theologians, moralists, essayists; and an ample choice of miscellaneous writers. To enumerate the most important of them would be simply to repeat the prominent names in the literature of the English language. Though not aiming in any degree at the acquisition of books whose principal value consists in their rarity, Mr. Dowse was not without fondness for bibliographical curiosities. His collection contains a considerable number of curious works seldom found on this side of the Atlantic, and among them a magnificent large paper-copy of Diddin's bibliographical publications. Though somewhat reserved in speaking of his books, and generally contented with simply calling a friend's attention to a curious volume, he sometimes added, in a low voice, "A rare book."

When the works of authors, falling within his range, had been collected in a uniform edition, he was generally provided with it. There is not much of science, abstract or applied; though that expression may seem ill chosen, when I add that it contains translations of Newton's "Principia" and Laplace's "System of the World." There is but little of jurisprudence in any department; but Grotius and Vattel, and one of the critical editions of Blackstone, show that neither the public nor municipal law had been wholly overlooked by him. In American books the library is rather deficient. It contains President John Adams' "Defence of the American Constitutions;" but no work on the Constitution of the United States, and but very few having any bearing upon political questions. There are the works of Hamilton, whom Mr. Dowse greatly respected; of Fisher Ames; Jefferson's "Notes on Virginia;" and the little volume entitled the "Political Legacies of Washington;" but with these exceptions, and that of the works of Franklin, whom he held in especial honor, Mr. Dowse's library contains the writings of no one of the Presidents of the United States, nor of any one of our distinguished statesmen. It is well supplied in the department of American history, and in that branch contains some works of great rarity and value. Of congressional documents, I think there is not one on the catalogue!

That it wants many books not less valuable than many which it contains, is no doubt true. Nothing else was possible, in a collection of five thousand volumes. Had it been fifty or five hundred thousand, the case would have been the same. It is to be remembered also, that he formed his library not in a mass, and on the principle of embracing at once all the books belonging to any particular department. He sent for the books which he wanted; for the books which were offered in sale catalogues at acceptable prices; for the books which fell in with his line of thought at the time; reserving to future opportunities to supply deficiencies, and make departments more complete. It must be recollected, too, that though his business prospered, and yielded what, under the circumstances of the case, might be deemed an ample income, he never had at command the means for extravagant purchases. Nothing would be more inconsiderate than to compare his library with the great foreign private libraries—Mr. Grenville's or Lord Spencer's in England, or Mr. Lenox's in this country, on which princely fortunes have been expended; although, if estimated in proportion to his means, his modest collection would not suffer in the contrast. "When I was twenty-eight years of age," Mr. Dowse remarked to Mr. Ticknor, "I never had any means but the wages of a journeyman leather dresser, at twenty-five dollars per month; I had never paid five dollars for conveyance from one place to another; I never had worn a pair of boots; and I was at that time in the possession of several hundred good books, well bound."

For a long course of years, he seems to have contemplated no other destination for his books than that which awaits the majority of libraries at home and abroad—that of coming to the hammer on the decease of their proprietors. Happily for us—and, may I not add, happily for him while he yet lived?—happily for his memory, he conceived the noble idea of bestowing it, while he lived, on a public institution. By an act of calm self-possession rarely witnessed so near the falling of the curtain, he called you, sir (Hon. Robert C. Winthrop,) with our worthy associate, Mr. Livermore, to his presence, as the representatives of our society; and divesting himself in our favor of what had been his most valued property—the occupation of his time, the ornament of his existence—in which he had lived his life and breathed his soul, transferred it to the Massachusetts Historical Society.

You, gentlemen of the Historical Society, appreciated the value, you felt the importance, of the gift of his library, and received it as a sacred trust. You have consecrated to it an apartment, I may venture to say, not unworthy a collection so curious in its history, so precious in its contents—an inner room in your substantial granite building, approached through your own interesting gallery of portraits and extremely important historical library, looking out from its windows on the hallowed ground where the pious fathers of Boston and Massachusetts rest in peace. There, appropriately arranged in convenient and tasteful cabinets at the expense of his executors, and by their liberality, wisely interpreting and carrying out the munificent intentions of the donor, endowed with a fund which will insure that permanent supervision and care, without which the best library soon falls into decay, it will remain to the end of time, a μνῆμα as well as a κτῆμα εἰς ἀεί—a noble monument, more durable, more significant, than marble or brass—to his pure and honored memory. There, with the sacred repose of death beneath the windows, and the living repose of canonized wisdom around the walls, the well-chosen volumes—the solace for a long life of his own lonely, but, through them, not cheerless hours—will attract, amuse, inform, and instruct successive generations. There his benignant countenance—admirably portrayed by the skillful artist, at the request of the society, in the last weeks of his life—will continue to smile upon the visitor that genial welcome, which, while he lived, ever made the coveted access to his library doubly delightful. There the silent and self-distrusting man, speaking by the lips of all the wise and famous of our language, assembled by his taste and judgment on the shelves, will hold converse with studious and thoughtful readers, as long as the ear drinks in the music of the mighty masters of the English tongue—as long as the mind shall hunger, with an appetite which grows with indulgence, for the intellectual food which never satisfies and never cloys.

Of this library, his neighbor, friend and executor, George Livermore, Esq., remarks:—

"Perhaps there never was a library of the same size where the books were more closely identified with the collector. His library was to him more than a collection of rare and costly intellectual treasures. Each volume possessed some special interest; for it was at first bought and read because the author or his work pleased him, or because it either directly or indirectly illustrated some theory, principle, or object, in which he felt interested. A book, once admitted to a place upon his shelves, became to him a constant companion and a personal friend. Indeed, through the greater part of his long life, his chief converse was with these silent teachers, these gentle guides. He enjoyed, it is true, the visits of persons of cultivated intellectual and refined taste from his own neighborhood or from a distance; but these visits were short, if not infrequent, and afforded little opportunity for any thing more than passing remarks respecting authors and editions.

"Though Mr. Dowse lived so much by himself, he should not be considered a solitary man. In his early life, he could have truly adopted the language of Channing: 'No matter how poor I am. No matter though the prosperous of my own time will not enter my obscure dwelling. If the sacred writers will enter, and take up their abode under my roof; if Milton will cross my threshold to sing to me of Paradise; and Shakspeare, to open to me the worlds of imagination and the workings of the human heart; and Franklin, to enrich me with his practical wisdom—I shall not pine for want of intellectual companionship; and I may become a cultivated man, though excluded from what is called the best society in the place where I live.' This glorious companionship he had; and it fully sufficed him when his 'dwelling' was no longer 'obscure,' and when he would have been welcomed and honored in any society of cultivated minds."

II. METHODS OF INSTRUCTION.

BY REV. WILLIAM ROSS.

I. THE CATECHETICAL METHOD.

1. The adjective *catechetical* is derived from the Greek. The verb κατηχέω, from which it is formed, is said to be used in the earlier Greek writers in the sense of "to resound or make a pleasant noise," &c., but in the later Greek writers and in the Fathers it signifies "to instruct in first principles—especially the first principles of religion." The verb occurs several times in the New Testament—for instance, in Luke, i. 4; Acts, xviii. 25, xxi. 21, 24; Rom. ii. 18; 1 Cor. xiv. 19; Gal. vi. 6;—and is translated according to the context, "to instruct," "to inform," "to teach."

2. The catechetical method, as we employ the phrase, is the method of teaching by questioning. Yet all questioning does not come under this head. Questions may be asked for the purpose of proving whether what has been previously learned has been rightly understood and is remembered by the pupil. This is examination, not catechisation. Catechetical questioning implies teaching—examinatory questioning, merely testing or proving. In practice they readily blend, but it is better to consider them separately.

3. In employing this method, the teacher should previously decide in his own mind the track that he intends to pursue in imparting his information; and this will necessarily differ according to circumstances. A few general remarks are therefore all that can be here offered on the subject.

4. The first class of questions may have reference to the meanings of the words singly.

All language is more or less figurative, and words frequently make a more vivid and lasting impression upon us when we know their precise literal meaning as well as their ordinary signification. But the extent to which this analysis ought to be carried must, of course, depend upon the age and general attainments of the scholars, &c., &c.

5. The second class of questions may refer to the expressions employed, that is, the words taken in the relation which they bear to one another—their syntactical relations.

Peculiar collocations of words or idioms are to be found in every language, and they abound in the English language, in which it not unfrequently happens, that we have to employ three or four words to convey an idea which in other languages may be expressed by a single word.*

6. The third class of questions may aim at eliciting the facts or doctrines taught in the subject, with their relations and bearings to collateral facts or doctrines.

7. In the fourth class of questions, an endeavor may be made to elicit the inferences which ought to be drawn from the full consideration of the subject—or in other words, the lesson that it teaches, or what may be called the application of the instruction.

8. If the questions are of an examinatory kind, they may be put with great rapidity, but if of a catechetical kind, more time may intervene, yet not so long as to allow the catechumens to get into a state of quiescent sluggishness.

9. One general rule for the conducting of the catechetical process, is to *tell as little as possible.* It is always better to elicit the information by subordinate questions, where it can be done, than to tell the pupils in a direct form.†

10. In teaching by the catechetical method, one should by all means avoid long intervening explanations, or, as they are sometimes called, preachments.

11. In his questioning the teacher ought to endeavor, by a kind of mental substitution, to place himself, as it were, in the condition of his scholars as it regards their knowledge of the subject in hand. But in doing this, he ought not of course to descend to the incorrect language or manners of his scholars, but gradually lead them to imitate himself in these respects.

12. A monotony of voice in questioning ought to be avoided.

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* Suppose the words perfectly understood, the teacher ought, in general, to translate the information out of the technical language in which it may happen to be invested, into his own ordinary language, or that of the pupils to whom he may wish to convey the information.

This is necessary in order that the subject may come entirely home to them, and that their minds may properly assimilate it. For our language is by usage fixed for us, and we can not alter it; and into that common language in which we think and feel, all truth must be translated, if we would *think* and *feel* respecting it, at once rightly, clearly, and vividly. See Dr. Arnold's Discourses.

† The desirable point is, to insinuate your information into their minds, so that by indirect and tortuous entrance it may be caught and entangled with what is already there, and not slip out again, as it would through a direct passage.

The main point is, so to shape and order your questions as never to be reduced to tell them any thing in the way, and that the last answer should give the conclusion full and convincing.

This evidently requires much patient practice on the part of the teacher, and some acquirements also. He must have gauged the capacity of the minds of children, obtained an insight into their working, so that he may know where and how to press with his questions.—*Evans.*

Whatever pitch of voice be adopted, if a monotone be persisted in, its effect is to beget weariness—and in children perhaps sooner than in grown persons.

13. On the other hand, a suitable variety of inflection in the voice tends powerfully to awaken and preserve the attention, to deepen impressions, and to lead the pupils themselves to employ correct and appropriate modes of expression.

14. The catechetical lesson that attains its object in a satisfactory way by the shortest course, is the best. Questions that lead too far from the principal point of the lesson ought therefore to be avoided.

If the teacher perceive that the course he intended to pursue is likely, from some unforeseen cause, to lead him too far from the object of the lesson, he may change that course; yet the necessity for making such a change should if possible be avoided, as it generally mars more or less the effectiveness of the lesson.

15. In general, the question ought not to be put to each scholar seriatim, but to the whole division or class. By this means the attention of all is kept on the stretch. In general, too, the answer ought to be given by an individual pupil, and not by the whole division or class simultaneously. Too many questions ought not to be asked immediately after one another of the same pupil; and each ought to answer only a fair proportion of the whole. Each scholar, whenever it can be done, ought to be called upon to answer *some* questions in every lesson. Where the attainments of the division or class vary considerably, the questions may be so framed and so addressed as in some measure to meet this variety. The pupil that is required to answer ought to be addressed by name, or otherwise made to know so certainly that he is appealed to, as to prevent a misunderstanding on this point.

In the catechetical method there are two principal elements that claim our attention—the *question* and the *answer*.

The Question ought not to be above the Pupils' Comprehension.

1. In *language*.

2. It ought not to be above it in *sense*.

3. It ought not to be *too complex*, that is, include in it so many particulars as to bewilder. The obvious remedy for this is to break up the question into a number of smaller ones.

4. The question ought not to require a longer answer than the pupils can properly express in language. On the other hand—

5. It ought not to be frequently so formed as to admit of the monosyllabic answer *yes* or *no*. Such questions do not sufficiently exercise the minds of the pupils.

6. The question ought not to be put too frequently *in the same form of words.*

Uniformity long continued creates mental weariness in all persons, and will of course do so sooner in the case of children than in persons of mature mind. For when the speaker ceases to be interesting, grown persons may ceases to attend to him; and by turning their thoughts inward, they possess in reflection a much larger store of entertainment than young children.

But in addition to this, the teacher by using correct and varied language leads his pupils insensibly to imitate him in this respect; and so to acquire the valuable habit of correct mental composition—a point which ought not to be overlooked even in our most elementary schools. The learning of grammar rules will not of itself accomplish this. Practice is necessary, and no school-exercise affords a better field for this practice than the catechetical method.

7. The question ought to be pointed and definite—not *vague, ambiguous, or obscure.*

8. It ought in general to admit but of *one correct answer.*

9. The question ought to depend as to its *kind* upon the character of the preceding answer.

10. The question in general ought to bear the same relation to the preceding and subsequent questions, *that one link of a chain bears to the links adjacent to it.*

11. The question ought in general *to be short.*

The attainments of the pupils must partly decide the latitude to be allowed in this respect.

12. The question ought to contain *no superfluous words.* It is possible by multiplying words to increase obscurity—and every unnecessary word in a question put to children is not only useless, it is injurious; if it does no good, it is sure to do harm.

13. The question ought not to end frequently in the word *what?*

14. Need we say that it ought to be grammatically correct?

The Answer.

1. The question either is or is not answered. In the latter case, the first thing the teacher ought to do is not to say, "How stupid you are!" but to consider whether the cause of the failure rests with himself or with the pupils. If he observes not carelessness and evident inattention on the part of the pupils, let him always look to himself first for the cause of the failure.

2. Perhaps he has put the question in a too difficult, too obscure, or too ambiguous form, and has at the same time asked it in a harsh, unsympathizing, repulsive, or intimidating manner, &c., &c. If any

such faults exist on the part of the teacher, they must of course be corrected.

3. If the pupils do not answer, it is either because they can not or will not. In the latter case, their silence may originate in *sullenness*, *ill-temper*, *spite*, or *bravado*. Against that spirit of which these are manifestations—should it ever in any measure show itself—the teacher must strenuously set his face.

Or it may originate in *timidity*, *fear of answering wrongly*, *bashfulness*, *&c*., *&c*.—which hindrances are to be got over by a kind and encouraging manner.

The pupils' inability to answer may also originate in their inattention, or their want of sufficient command of language properly to express themselves, &c., &c. The remedies for these causes of failure are obvious.

4. The answer when given is either *right* or *wrong*. It is right when it is correct as it respects fact; that is, *answers* to the question, and is properly expressed; and it is wrong when it is deficient in either of these respects.

5. The answer may be either wholly wrong, that is, *false*, or only partly wrong, that is, *faulty*.

If the question has been properly asked, and a false answer is returned, the fault lies with the pupils.

6. They may answer wrongly from playfulness, carelessness, inattention, or absence of mind—their thoughts may be at the ends of the earth, &c., or they may not have fully heard, or rightly understood, the question.

In the latter cases, the remedy is the repetition of the question in a perfectly distinct and audible tone of voice, and in a form that admits not of being misunderstood.

7. Or the answer may be false because the pupils really entertain false ideas respecting the matter to which the question relates. In which case it is of course the teacher's business forthwith to correct carefully and thoroughly such false notions.

8. The answer may be only partly wrong or faulty. With respect to the *matter* of the answer; this is the case when the pupil answers more than the teacher desired—or when he does not answer the question actually asked, but passing over the intermediate steps, gives an answer to a question to which he perceives the present question points—that is, he anticipates the teacher in his process. This only happens in the case of children of quick parts. The teacher can not greatly blame such pupils, yet for the sake of those of weaker capacities the practice must be checked; and if the for-

ward are allowed to answer, they must give only the precise answer which each question requires.

9. An answer may also be false with respect to its matter, when it is obscurely or indefinitely expresed—when it gives the genus instead of the species, or the species instead of the individual—or when the answer is only a part of what the question required.

10. The teacher ought not sternly to check or discourage such attempts on the part of the pupils—provided they proceed from an evident desire to learn, and to do their best. He ought rather to seem pleased with such answers, and gently lead the pupils by additional questions to correct their inaccuracies.

11. An answer may be partly wrong as respects its *form*, by containing grammatical mistakes. These the teacher will either correct himself, or allow some of the more advanced pupils to correct them. Such mistakes are perhaps never intentionally made, and the pupil that commits them ought not, therefore, to be laughed at.

12. The answer is faulty in form when it is not given in that part of speech or form of sentence which the question requires; when, for instance, a verb is given instead of a noun, a word instead of a sentence, &c., &c. A simple repetition of the question in such cases will generally lead the pupils to detect and correct such faulty expressions.

13. An answer may also be regarded as faulty with respect to form, when it is unintelligible on account of being mutteringly or indistinctly spoken. Such answers, when they do occur, should never be passed over. Distinct speaking, both on the part of the teacher and the pupils, is a matter of so vital importance that throughout the entire business of instruction too much stress can not be laid upon it.

14. The answer may also be faulty by being irrelevant to the question. It may contain in it something absurd or ridiculous—or it may be given in improper or vulgar language. But such answers will not often occur, and will, perhaps, never be given intentionally in a well-ordered school.

15. The treatment of such offenders must depend entirely upon the *spirit* in which the offense is committed. We content ourselves, therefore, by merely observing that *guessing*, *random*, and *foolish* answers should be vigorously discountenanced. Such answering is injurious to the pupil himself, often disrespectful to the teacher, and always a nuisance and hindrance to the class or division in which it occurs.

Counsels and Cautions Respecting the Employment of the Catechetical Method.

1. The teacher should never tell the first letter, first syllable, first word, or first part of the answer. This only gives rise to thoughtless guessing—senseless or ridiculous answers.

2. The teacher ought not capriciously to require the pupil to give the answer in the precise words that he (the teacher) may himself have thought of, and in his own mind prescribed, as it were, for the question. This only occasions loss of time, and needlessly discourages and dampens the ardor of the pupil, who may, in his own mind, feel convinced that he answered correctly, though perhaps not precisely in the words which the teacher wished to have.

3. The teacher need not repeat every correct answer. This ought to be avoided because, as in the former case, it is a waste of time and also renders the lesson too easy.

Such repetition is only allowable when the pupils are either very young or of slender capacities. Children of ordinary parts can, with proper attention, readily follow a well-arranged and well-conducted catechetical lesson. The teacher ought, however, to rĕpeat, and cause to be repeated, the more difficult answers and the chief points in the lesson.

4. The teacher ought to take care that he does not contract the habit of accompanying every correct answer by a mark of approbation expressed in some stereotyped phrase—such as, "very well," "very good," "quite right," "that's a good boy," "that's a good girl," &c., &c. The teacher can by his manner at once show whether the answer be correct or not. Such ever-recurring repetition is therefore a mere loss of time. It may, too, have an injurious influence on the pupils. They are likely either to expect to be praised on every occasion, or else, from its being bestowed so indiscriminately, to attach no value whatever to it. In the latter case, when an instance does occur in which approbation may be really merited, and ought to be bestowed, the teacher, by this bad habit, has deprived himself, in a great measure, of the power of giving such praise. The teacher's marked approbation ought therefore only to be bestowed on proper occasions—as, for instance, when a question of more than ordinary difficulty has been answered, or when an answer has been given evincing great attention and thoughtfulness, &c.

5. The teacher should never allow any other pupil to answer a question than the one who is asked. If others are prepared to answer, they may show that they are so by holding out their finger, or hand, horizontally. Confused answering, too, that is, several speaking

at one time, ought never to be allowed. In such a case, the teacher can neither judge of the correctness nor of the value of the answer. Besides this, the practice may give rise to *parroting* repetition, which ought, by all means, to be guarded against.

6. Some think it better that the answer should never be given in a *single* word, but in the form of a proposition or sentence complete in itself. For instance, suppose the question asked—"What is the shape of the world?"—the answer would not be simply "round"—but would be given in the form of a distinct sentence, thus—"the world is round." This plan will occupy more time than the one generally in use. As an occasional variety, however, of the ordinary method, we feel sure that the time it might occupy would not be misspent.

7. The teacher may, if he think fit, allow the pupils to ask him questions or propose to him difficulties arising out of the lesson: but if such a liberty is allowed, care must be taken that it be only employed within proper limits and in a proper spirit. With due caution and control, the practice may be attended with advantage. Such questions are always sure to excite the attention of even the less thoughtful pupils. Questions that are in this way put foreign to the subject, or in an imperfect form, &c., &c., &c., the teacher will readily know how to deal with. Any pupil that has endeavored to understand the lesson, but has not been able to do so, should always be allowed, and even encouraged, to tell his difficulties to his teacher at a proper time.

8. Mental surfeiting, whether it may be occasioned by too long lessons, or from whatever cause it may arise, ought to be as carefully guarded against as physical surfeiting, and for the very same reasons. For they both alike injure health, destroy the appetite, and create, for the most part, a disgust and loathing for the food, mental or physical, that has been indulged in to satiety.

This caution is, of course, applicable to all methods.

9. It is better, in general, that the pupil should answer in his own words, and not in the words of the text-book—except, of course, in cases where the object is to treasure up in the memory the precise language, as well as the substance of the instruction conveyed in it.

10. The teacher ought always to previously prepare his catechetical lesson. We have heard of teachers who boasted that they never prepared their lessons; but such a boast is much too silly and vain to deserve even a passing notice—except in the way of reprehension. Under ordinary circumstances the pretense of not having prepared the lesson is no valid excuse for its being a bad one; and, on the

other hand, a careful preparation does not at all detract from a good lesson.

11. The teacher ought not, in giving his catechetical lessons, to use a book, that is, to have the book in his hand, or to be otherwise confined to it; and this holds equally good, even should the book be drawn up in the form of question and answer. Such teaching, if teaching it deserves to be called, is not the catechetical method. The moment that a teacher becomes confined rigidly and mechanically to his text-book, he ceases to be, in the higher sense of the term, a teacher; he is rather a task-master.

Socratic Method Applied to Religious Instruction.

The following observations occur in a charge delivered by Archdeacon Bather, in 1835:—

I. The business of the catechist is to, first, *instruct* his pupils, by questioning the meaning into them, and then *examine* them, by questioning it out of them. The practice recommended has, of course, its difficulties; and the method can not be fully shown without more minute examples than can well be given in an address of this nature. I may possibly, however, explain myself in some degree.

The thing to be done is, to possess the minds of a number of ignorant and heedless children with the sense and meaning, we will say, of one of our Lord's parables, and to bring them to perceive and consider the practical lesson which it is intended to convey. In order to this, their attention must, in the first place, be gained and fixed; and then there will, probably, be words and phrases to be explained, perhaps old customs also—the literal story or similitude to be compared with the religious truth or doctrine which it is employed to illustrate, and other portions of Scripture to be cited and brought to bear on the point in hand, in a way of confirmation or further exposition.

Then there are two ways of proceeding: you may *preach* or *lecture* upon the subject, and in so doing you tell your hearers what you have acquired and ascertained yourselves; or else you may communicate instruction, as I advise, *by asking questions and correcting the answers*, or, I should rather say, by bringing the children themselves to correct them, by means of further questioning on your part; and in that case they tell you every thing. The catechist's method forces the child to think. Some little effort and application of mind is required of him—is actually extorted from him every moment.

Instead of making a speech, the instructor has put a question; perhaps he has got no answer, or a wrong answer; but he is not beating the air, and his pains are not thrown away. If he has but shown his pupil that something has been asked of him to which he can render no reply, at least he has arrested his attention, and probably excited his curiosity, and convinced him, moreover, of his ignorance, and made him perceive just in what place and instance he needs information; and therefore, if he has not made a proselyte, he has got a hearer, and from so small a beginning greater things are soon to follow. He has the opportunity, whilst the catechetical instruction is proceeding, of interspersing, as he gets his replies, many brief remarks and practical observations, in a natural and lively, and therefore attracting and affecting, manner; or he may sum up the particulars afterward in a short discourse, and ground upon them, with good effect, the admonitions which they obviously suggest. It would astonish an inexperienced person to see how much very young children may acquire in this way, and how much a whole school may be interested by it. They get imperceptibly a knowledge of words, and a fuller vocabulary; and so, one of the peculiar difficulties which every one will meet with who attempts to instruct the children of very ignorant parents, will be, in a great degree, overcome. Next to being asked a question ourselves, nothing awakens and interests us more than hearing others questioned; there will be curiosity to catch the child's reply; a thought can scarcely fail to cross the listener how he should reply himself, or whether he could reply. Many are glad to get information without the risk of exposing present ignorance; and when the information is watched and waited for, it is retained.

II. The catechetical method has been called by some the Socratic method. Though this name, it is true, has also been usurped by books written in the *form* of question and answer. In the *form* they may be, but in the *spirit* of the catechetical method they can not be; and if the method of Socrates was nothing more than as it is set forth in such books, truly mankind have long worshiped falsely.

The Socratic method appears to have consisted in a judicious combination of interrogation and dialogue. Socrates it has been remarked, in reasoning with those whose judgments he wished to inform or rectify, assumed the appearance rather of an inquirer than of a disputant. He insensibly led those whom he conversed with to draw themselves the conclusions he desired, by a series of well adapted interrogatories, rather than imposed his conclusions on them by the direct force of any arguments of his own.

He rather won their conviction by gradual and unobserved approaches, in which they followed him as a friend, than forced their assent by the weight of overbearing proofs as an assailant.

He rather helped them to inform and rectify their own judgments, than appeared in the magisterial office of dictating truth or refuting falsehood.

He found them ignorant of some important truth; and instead of professing to instruct them, he sought to learn their sentiments upon some other truth, with which he knew they were acquainted, and which he knew was connected with the one he wanted to lead them to. By familiar interrogatories he conducted them, step by step, through the intermediate principles; till they were at length surprised with the perception of what they had never observed before. He found them under the influence of some dangerous error; and instead of professing to correct them, he led them on by successive questions, to discern an absurdity in which they unexpectedly found themselves landed by their own principles. And thus he avoided all that resistance to conviction, which often renders the most conclusive demonstration ineffectual to persuade.—(See the "*Socratic Dialogues;*" also Dr. Wiggers' "*Life of Socrates.*"

The following, taken from the "*Apologia,*" may be regarded as a brief specimen of the Socratic mode:—

"Callias," said I, "if your two sons were colts or calves, we should have chosen a trainer for them, and hired him with a fee, one who would be likely to make them excellent and useful in performing their proper duties; now this man would be one of those skilled in horses or agriculture; but now, since they are men, what master are you thinking of choosing for them?" The answer is obvious, viz:—"A trainer fully skilled in such excellence as suits a man and a citizen."

III. Dr. Watts, in speaking of the Socratic method of teaching, observes:—This method of dispute derives its name from Socrates, by whom it was practiced, and by other philosophers in his age, long before Aristotle invented the particular forms of syllogism in mood and figure which are now used in scholastic disputations.

The Socratical way is managed by questions and answers, in such a manner as this, viz:—If I would lead a person into the belief of a heaven or hell, or a future state of rewards and punishments, I might begin in some such manner of inquiry, and suppose the most obvious and easy answers:—

Q. Does God govern the world?

A. Surely he that made it governs it.

Q. Is not God both a good and righteous governor?

A. Both these characters doubtless belong to him.

Q. What is the true notion of a good and righteous governor?

A. That he punishes the wicked and rewards the good.

Q. Are the good always rewarded in this life?

A. No, surely; for many virtuous men are miserable here, and greatly afflicted.

Q. Are the wicked always punished in this life?

A. No, certainly; for many of them live without sorrow, and some of the vilest of men are often raised to great riches and honor.

Q. Wherein, then, doth God make it appear that he is good and righteous?

A. I own there is but little appearance of it on earth.

Q. Will there not be a time, then, when the tables shall be turned, and the scene of things changed, since God governs mankind righteously?

A. Doubtless, there must be a proper time wherein God will make that goodness and that righteousness to appear.

Q. If this be not before their death, how can it be done?

A. I can think of no other way but by supposing man to have some existence after this life.

Q. Are you not convinced, then, that there must be a state of reward and punishment after death?

A. Yes, surely; I now see plainly that the goodness and righteousness of God, as governor of the world, necessarily require it.

Now the advantages of this method are very considerable.

1. It represents the form of a dialogue, or common conversation, which is a much more easy, more pleasant, and more sprightly way of instruction, and more fit to excite the attention and sharpen the penetration of the learner, than solitary reading or silent attention to a lecture. Man, being a social creature, delights more in conversation, and learns better this way, if it be wisely and happily practiced.

2. This method has something very obliging in it, and carries a very humble and condescending air, when he that instructs seems to be the inquirer, and seeks information from him who learns.

3. It leads the learner into the knowledge of truth, as it were, by his own invention, which is a very pleasing thing to human nature; and by questions pertinently and artificially proposed, it does as effectually draw him on to discover his own mistakes, which he is much more easily persuaded to relinquish when he seems to have discovered them himself.

4. It is managed, in a great measure, in the form of the most easy reasoning; always arising from something asserted or known in the foregoing answer, and so proceeding to inquire something unknown in the following question, which again makes way for the next answer. Now such an exercise is very alluring and entertaining to the understanding, while its own reasoning powers are all along employed, and that without labor or difficulty, because the querist finds out and proposes all the intermediate ideas or middle terms.

The following remarks are abridged from "*An Apology or Defense of the Catechetical Method,*" by Dr. Dinter:—

The catechetical method is the science, art, manner (or call it what you will) of instructing beginners by means of question and answer. This art I have undertaken to defend against its opponents. Who, then, are its opponents? They are of different kinds, and assume various grounds of objection.

The first class object, that the subject-matter of the instruction is not by this method learnt in an orderly manner, and that it is only, as it were, a hearsay kind of knowledge that is thus acquired. Thus it fares with the catechetical method as with philosophy, the mathematics, religion, &c. He who is wholly unacquainted with it, or who only half knows it, rails against it. But have you ever heard of one who had catechised efficiently, and in the true Socratic manner, for the space of ten years, who gave up the method, saying he had proved that it was good for nothing; that men can not by means of it be made more intelligent or better? The physician who, after a professional experience of forty years, employs a remedy, must, indeed, be in a condition to form a correct opinion of its probable effect. But he who only knows such remedy through books, may very easily form a false opinion respecting it. As judges of philosophy we select only philosophers; and to judge of the catechetical method, therefore, only those who are themselves conversant with it. In England, lords only judge lords.

A second class of opponents appear not to know themselves what they speak against. At one time they condemn all catechising; at another time they speak as if it were only the Socratic method to which they are opposed; so that one does not know well what to make of such complaints. But suppose the catechetical method be rejected entirely, pray what better method are our opponents prepared to substitute in its place? Shall I tell you in what light such opponents appear to me? Like the man who wished to banish Aristides. Why? "I don't," said he, "at all know Aristides; but I am greatly chagrined that so much should be made of him everywhere."

There is a third class of enemies to the catechetical method; they are the least culpable in their opposition, but perhaps not the most harmless. They are, however, those whom I hope to be able most easily to reconcile. They have adopted other methods, and have become attached to them; and one can not give up, with indifference, any thing to the use of which one has become habituated. Their opposition, however, seems to be founded on a misapprehension. They seem to think that the friends of the catechetical method desire that it should be employed in teaching every subject, and in all the classes in the school. But such is far from being the case. The catechetical method has its proper sphere and its proper limits; and it is only within these that its friends would wish to see it employed.

What, then, further are the charges brought against the catechetical method by these our opponents? Let us hear them, and examine them. 1st. It is too difficult. 2d. It is too tedious. 3d. It is not suitable to all subjects. 4th. It educates only in a one-sided manner. 5th. It over-educates. Five grave charges. I trust, however, to be able to disprove them all.

1. It is too difficult. What is? The analytico-catechetical method? Certainly not. When a man has thought out a subject in a clear manner—and this is what every teacher ought to be able to do—he is then in a condition to analyze such subject, and to explain to his pupils whatever may be obscure in it, and again to question the meaning of it out of them; and, when a section is thus finished, to present a summary of the whole. A thing much more difficult than this, is the teaching to read, especially according to the old-fashioned plan.

But what part of instruction is not difficult?

Those who would convert teaching into a mere mechanical process, would deprive it of its true dignity; and whoever does not wish to do this, must, at least, admit the necessity of the subject-matter of the instruction being duly analyzed. The catechetical method, when compared with other methods of instruction, will be found to be easier rather than more difficult. And however difficult it may be, suffice it to say, that it is necessary. It is too difficult only for those who have not at all practiced it. It becomes easier, too, the more intimately the teacher becomes acquainted with the way by which the pupils arrive at a clear knowledge of whatever subject is brought before them.

He who examines badly, will most probably catechize still worse. Hence it comes that the method itself is esteemed so difficult. "I have," says one, "heard very many catechists, but among them all there were but few indeed really good ones." What follows from this? "That we should not at all attempt to employ the method?" Is, then, preaching easier? I, who am vain enough to think that I know both, believe it is not. If we would, therefore, act justly, we must either condemn the practice of preaching, or else *not* condemn the catechetical method.

Moreover, the difficulty of the catechetical method, and the few preëminently good catechists that are to be met with, are no valid objections against the study and practice of the method itself.

We do not forbid men to philosophize because a *Kant* seldom arises, nor to paint because a *Menge* is rare. But enough of this charge. Let us examine the second.

2. The catechetical method renders the instruction too tedious and prolix. That the employment of the catechetical method does not engross more time than is compatible with the claims of our elementary schools, I have fully proved by a thirty years' experience of it. It is, indeed, difficult at first. But as soon as the pupils acquire courage to speak out freely, then all goes on quickly enough; and the pleasure of the little folks increases from week to week, with the free use of their own powers.

The catechetical method, when rightly employed, impresses the instruction more deeply on the mind than, perhaps, any other method. By means of it, similar ideas are so associated in the minds of the pupils, that, on any exciting cause awakening one idea, the whole series is readily and vividly called up in the mind. But even if other methods were shorter, we should still prefer the catechetical method, as being the most effectual. The greatest economist does not refuse to employ his money, provided he is sure of thereby increasing it. Just so, the educator is aware that the time which, in certain stages of education, may seem, to a superficial observer, to be misspent, will, by and by, like money well employed, be repaid with a rich interest.

3. The third objection—viz., that the catechetical method is not suitable to all subjects—is least frequently heard, and most easily confuted.

Must, then, any one method be either applied or applicable to the teaching of all branches of instruction? This objection is just about as much worth as if one should complain that a razor was good for nothing, because its edge was spoiled by cutting bread with it; for which purpose it was, of course, never intended. If a thing answers the purpose for which it was designed, it is all that ought to be expected from it.

For instance, it is no more a valid objection against the catechetical method, to say that Geography, some parts of Natural Philosophy, &c., can not be taught by it, so as to supersede the necessity of visible illustrations, than it would be a valid objection against the method usually employed to impart religious instruction, to say that such method is not suited to the teaching of arithmetic, &c.

4. The catechetical method, says the fourth class of our opponents, educates only in a one-sided manner. They allow that it may be employed with advantage to awaken and strengthen the understanding, but that this it effects at the expense of the other powers. The feelings, for instance, say they, remain uninfluenced. They further object, that the method analyzes the ideas, and teaches the child himself to investigate and sift every thing that comes under his notice; and thus it treats the most sacred subjects as if they were mere matters of fact, appealing to the reason only. Some of the specimens of the catechetical method that have been published are, I allow, open to these objections. Some of these writers appear to me in pretty much the same position as the organist to whom the chapel-master Newman said, that "*he committed no other fault than this, that he committed no fault;*" and when begged to explain this Delphic saying, he added, that the attention he gave to all the minutiæ, and the fear lest he should play the slightest grace falsely, so occupied his entire soul, that, though he played the notes correctly, yet he did not infuse into the whole piece a proper spirit. But this is by no means the case with all the writers on the catechetical method; and much less is it the case with the many worthy men who daily practice it.

I myself think with pleasure on the happy years I spent as a village schoolmaster. I have enjoyed many happy hours, but none have been more happy to me than those in which my upper classes imbibed from my mouth, yea, warm from my heart, the words of the Lord—those truths of religion, which I had myself previously examined and carefully thought out, in order that I might the more deeply and vividly experience their truth and reality.

Think ye—that at these times, when I was thus humbly endeavoring to carry into practice that method for which I am now pleading, and when my labors were not unfrequently rewarded by the sympathetic tear of love—think ye—that on such occasions the feelings of either the teacher or the taught remain uninfluenced for good? The cherished recollections of such scenes yet awaken in my bosom the tenderest sentiments of which my nature is susceptible.

5. But "the catechetical method over-educates." Let us hear nothing of this complaint while our own peasantry, generally, are yet unable to understand the simplest sermon; and three-fourths of the inhabitants of our towns, though better clothed indeed, are not a whit before our peasantry in their intellectual culture. Nor let such a complaint be heard while superstition finds everywhere her altars. Let us first duly extend education, before we entertain any fears about over-education.

There are only three ways in which, according to my view of the matter, there can be said to be an over-education:—First, when any one of the mental powers is developed and educated to the detriment of the other powers which remain uncultivated, and consequently, as it were, barren and useless. Secondly, where there is imparted a mass of inappropriate information, which is calculated to render men discontented with their social position, and thus to incapacitate them for the due discharge of their every-day duties. And, thirdly, where the powers are exercised solely upon groveling and unworthy subjects which are not calculated to promote a suitable human culture. But I need hardly say that to none of these charges is the catechetical method justly liable. The catechetical method, it is true, teaches our people to think for themselves; but who is there despotic enough to say that our people ought to be deprived of this, the most sacred of human rights?

But, in conclusion, shall I tell you with what, it seems to me, I might aptly compare the catechetical method? With the magistracy of Capua, mentioned by Livy. Perhaps this half-earnest, half-jocular anecdote may have escaped your memory. The substance of it is simply this: The people of Capua were loud in their complaints that their magistracy was good for nothing. One of the inhabitants, who wished to preserve the magistracy in office, set to work in the following manner. He called the people together, and explained to them that he had observed that the present Senate had lost the confidence of the people. "Hear! hear!—lost it completely!" shouted the embittered populace. "In my opinion, therefore," rejoined the speaker, "it ought to be deposed. But of course the commonwealth can not exist without any Senate at all." "No; but a new election shall be made," shouted the people. "That, too, is my opinion," retorted the speaker. Immediately, this one, that one, and the other one, were proposed as members of the new magistracy. But soon all became tumult. One party did not possess any reputation, another was known to have a bad one, a third was too young, too inexperienced—the fourth was too old, too powerless, and besides, had never achieved any thing remarkable. What was the end of all this? The Senate was allowed to remain as it had been before, but was cautioned not to abuse its rights, and to allow the people to give an opinion on matters that concerned them; and thus the affair was amicably arranged. Need I tell you whom the people of Capua resemble?

III. PUBLIC INSTRUCTION IN FRANCE.

I. PRIMARY INSTRUCTION.

Before 1789, religious zeal, the spirit of association, the desire of living honorably in the recollection of mankind as the founder of pious or learned institutions, individual enterprise, and to some extent government endowment, had covered France with establishments of higher education, and with men consecrated to their service. This was particularly true with regard to schools for classical education, and the instruction generally of all but the poorer classes of society. In grammar schools and colleges, France was as well provided in 1789, as in 1849. In the upbreak and overthrow of government and society, which took place between 1789 and 1794, and which was, in no small measure, the result of the neglected education of the great mass of the people, these public endowments, many of which had existed for centuries, were destroyed, and these religious and lay congregations, such as the Benedictines, Jesuits, Oratorians, Doctrinaires, Lazaristes, and Brothers of the Christian Doctrine, were abolished, their property confiscated, and most of them were never again re-established. From 1791 to 1794, by various ordinances of the Convention, a system of public schools was projected, in which primary education was to be free to all at the expense of the State. Out of these ordinances sprung the first Normal School in France, and the Polytechnic School in 1794. But the promise of good primary schools was not realized, and the Normal School was abolished in the following year. In 1802 the promise was renewed in a new ordinance, but amid the din of arms, the peculiar fruits of peace could not ripen. In 1808 Napoleon organized the Imperial University, embracing under that designation the governmental control of all the educational institutions of France, primary, secondary, and superior. In one of his decrees, primary instruction (intended for the masses of society) was limited to reading, writing and arithmetic, and the legal authorities were enjoined "to watch that the teachers did not carry their instructions beyond these limits." Under the organization established by Napoleon, and with views of primary education but little expanded beyond the imperial ordinance referred to, and with even these limited views unrealized, the government continued to administer the system of public education till the Revolution of 1830. In the mean time the wants of a more generous and complete system of primary schools had been felt throughout France, and one of the first steps of the new government was to supply this want, and most considerately and thoroughly was the work accomplished. Not only were steps taken to increase the number and efficiency of the schools already established, by additional appropriations for their support, but the Department of Public Instruction was re-organized. Normal Schools for the education of Teachers were multiplied, and made effective, and the experience of the best educated states in Europe was consulted in reference to the reconstruction of the whole system.

There is nothing in the history of modern civilization more truly sublime than the establishment of the present Law of Primary Instruction in France. As has been justly remarked by an English writer, "Few nations ever suffered more bitter humiliation than the Prussians and French mutually inflicted during the earlier years of the present century; and it was supposed that feelings of exasperation and national antipathy thus engendered by the force of circumstances, were ready, on the match being applied, to burst forth in terrible explosion. At the very time, however, when the elements of mischief were believed to be most active in the breasts of a people jealous of their honor, and peculiarly sensitive to insult, the French ministry, with the consent of the King and Chambers, send one of their ablest and wisest citizens, not to hurl defiance or demand restitution, but to take lessons in the art of training youth to knowledge and virtue, and that too in the capital of the very nation whose troops, sixteen years before, had, on a less peaceful mission, bivouacked in the streets of Paris, and planted their victorious cannon at the passages of her bridges. There are not many facts in the past history of mankind more cheering than this; not many traits of national character more magnanimous, or indicating more strikingly the progress of reason, and the coming of that time when the intercourse between nations will consist not in wars and angry protocols, but in a mutual interchange of good offices."

M. Victor Cousin, one of the most profound and popular writers of the age, in one department of literature, who was sent on this peaceful mission in the summer of 1831, submitted in the course of the year to his government, a "*Report on the condition of Public Instruction in Germany, and particularly in Prussia.*" This able document was published, and in defiance of national self-love, and the strongest national antipathies, it carried conviction throughout France. It demonstrated to the government and the people the immense superiority of all the German States, even the most insignificant duchy, over any and every department of France, in all that concerned institutions of primary and secondary education. The following extracts will indicate the conclusions to which Cousin arrives in reference to the educational wants of his own country. After pronouncing the school law of Prussia "the most comprehensive and perfect legislative measure regarding primary instruction" with which he was acquainted, he thus addresses himself to the minister:

"Without question, in the present state of things, a law concerning primary instruction is indispensable in France; the question is, how to produce a good one, in a country where there is a total absence of all precedent and all experience in so grave a matter. The education of the people has hitherto been so neglected,—so few trials have been made, or those trials have succeeded so ill, that we are entirely without those universally received notions, those predilections rooted in the habits and the mind of a nation, which are the conditions and the bases of all good legislation. I wish, then, for a law; and at the same time I dread it; for I tremble lest we should plunge into visionary and impracticable projects again, without attending to what actually exists.

The idea of compelling parents to send their children to school is perhaps not sufficiently diffused through the nation to justify the experiment of making it law; but everybody agrees in regarding the establishment of a school in every *commune* as necessary. It is also willingly conceded that the maintenance of this school must rest with the *commune;* always provided that, in case of inability through poverty, the *commune* shall apply to the department, and the department to the state. This point may be assumed as universally admitted, and may therefore become law.

You are likewise aware that many of the councils of departments have felt the necessity of securing a supply of schoolmasters, and a more complete education for them, and have, with this view, established primary Normal Schools in their departments. Indeed, they have often shown rather prodigality than parsimony on this head. This, too, is a most valuable and encouraging indication; and a law ordaining the establishment of a primary Normal School in each department, as well as a primary school in each *commune*, would do little more than confirm and generalize what is now actually doing in almost all parts of the country. Of course this primary Normal School must be more or less considerable according to the resources of each department.

Here we have already two most important points on which the country is almost unanimously agreed. You have also, without doubt, been struck by the petitions of a number of towns, great and small, for the establishment of schools of a class rather higher than the common primary schools; such as, though still inferior in classical and scientific studies to our royal and communal *colleges*, might be more particularly adapted to give that kind of generally useful knowledge indispensable to the large portion of the population which is not intended for the learned professions, but which yet needs more extended and varied acquirements than the class of day-laborers and artisans. Such petitions are almost universal. Several municipal councils have voted considerable funds for the purpose, and have applied to us for the necessary authority, for advice and assistance. It is impossible not to regard this as the symptom of a real want,—the indication of a serious deficiency in our system of public instruction.

You are sufficiently acquainted with my zeal for classical and scientific studies; not only do I think that we must keep up to the plan of study prescribed in our *colleges*, and particularly the philological part of that plan, but I think we ought to raise and extend it, and thus, while we maintain our incontestable superiority in the physical and mathematical sciences, endeavor to rival Germany in the solidity of our classical learning.

Let our royal *colleges* then, and even a great proportion of our communal *colleges*, continue to lead the youth of France into this sanctuary; they will merit the thanks of their country. But can the whole population enter learned schools? or, indeed, is it to be wished that it should? Primary instruction with us, however, is but meager; between that and the *colleges* there is nothing; so that a tradesman, even in the lower ranks of the middle classes, who has the honorable wish of giving his sons a good education, has no resource but to send them to the *college*. Two great evils are the consequence. In general, these boys, who know that they are not destined to any very distinguished career, go through their studies in a negligent manner; they never get beyond mediocrity; and when, at about eighteen, they go back to the habits and the business of their fathers, as there is nothing in their ordinary life to recall or to keep up their studies, a few years obliterate every trace of the little classical learning they acquired. On the other hand, these young men often contract tastes and acquaintances at *college* which render it difficult, nay, almost impossible, for them to return to the humble way of life to which they were born: hence a race of men restless, discontented with their position, with others, and with themselves; enemies of a state of society in which they feel themselves out of their place; and with some acquirements, some real or imagined talent, and unbridled ambition, ready to rush into any career of servility or of revolt. The question then is, whether we are prepared to make ourselves responsible to the state and society for training up such a race of malcontents? Unquestionably, as I shall take occasion to say elsewhere, a certain number of exhibitions (*bourses*) ought to be given to poor boys who evince remarkable aptness: this is a sacred duty we owe to talent; a duty which must be fulfilled, even at the risk of being sometimes mistaken. These boys, chosen for the promise they give, go through their studies well and thoroughly, and on leaving school experience the same assistance they received on entering. Thus they are enabled, at a later period of life, to display their talents in the learned and liberal professions which are open to them, to the advantage of the state to which they owe their education. As, however, it is impossible for any government to find employment for every body, it ought not to furnish facilities for every body to quit the track in which his fathers have trod. Our *colléges* ought, without doubt, to remain open to all who can pay the expense of them; but we ought by no means to force the lower classes into them; yet this is the inevitable effect of having no intermediate establishments between the primary schools and the *colléges*. Germany and Prussia more especially, are rich in establishments of this kind. You perceive that I allude to the schools called tradesmen's or burghers' schools, or schools for the middle classes, (*Bürgerschulen*,) *écoles bourgeoises*, a name which it is perhaps impossible to transplant into France, but which is accurate and expressive, as contradistinguishing them from the learned schools, (*Gelehrteschulen*,) called in Germany *gymnasia*, and in France *colléges*, (in England, "grammar-schools,") a name, too, honorable to the class for whose especial use and benefit they are provided; honorable to those of a lower class, who by frequenting them can rise to a level with that above them. The burgher schools form the higher step of primary instruction, of which the elementary schools are the lower step. Thus there are but two steps or gradations: 1°. Elementary schools,—the common basis of all popular instruction in town and country; 2°. Burgher schools, which, in towns of some size and containing a middle class, furnish an education sufficiently extensive and liberal to all who do not intend to enter the learned professions. The Prussian law, which fixes a minimum of instruction for the elementary schools, likewise fixes a minimum of instruction for the burgher schools; and there are two kinds of examination, extremely distinct, for obtaining the brevet of primary teacher for these two gradations. The elementary instruction must be uniform and invariable, for the primary schools represent the body of the nation, and are destined to nourish and to strengthen the national unity; and, generally speaking, it is not expedient that the limit fixed by the law for elementary instruction should be exceeded: but this is not the case with the burgher schools, for these are designed for a class among whom a great many shades and diversities exist,—the middle class. It is therefore natural and reasonable that it should be susceptible of extension and elevation, in proportion to the importance of the town, and the character of the population for whom it is destined. In Prussia this class of schools has, accordingly, very different gradations, from the minimum fixed by the law, to that point where it becomes closely allied with the gymnasium, properly so called. At this point it sometimes takes the name of Progymnasium, or preparatory gymnasia, in which classical and scientific instruction stops short within certain limits, but in which the middle or trading class may obtain a truly liberal education. In general, the German burgher schools, which are a little inferior to our communal *colléges* in classical and scientific studies, are incomparably superior to them in religious instruction, geography, history, modern languages, music, drawing, and national literature.

In my opinion, it is of the highest importance to create in France, under one name or another, burgher schools, or schools for the middle classes, which give a very varied education; and to convert a certain number of our communal *colléges* into schools of that description. I regard this as an affair of state.

There is a cry raised from one end of France to the other, demanding on behalf of three-fourths of the population, establishments which may fill the middle ground between the simple elementary schools and the *colléges*. The demands are urgent and almost unanimous.

The most difficult point in law on primary instruction is the determination what are the authorities to be employed. Here also let us consult facts. The

French administration is the glory and the masterwork of the imperial government. The organization of France in *maires* and prefectures, with municipal and departmental councils, is the foundation of government and of social order. This foundation has stood firm amidst so much ruin, that prudence and policy seem to point to it as the best and safest prop. Moreover, this organization has just been reformed and vivified by rendering the municipal and departmental councils elective and popular. Thus the French administration unites all that we want, activity and popularity. The administration, then, is what you must call to your aid. Recollect, also, that it is these local councils that pay, and that you can not fairly expect much from them unless they have a large share in the disbursement of the money they have voted. These councils are chosen out of the body of the people, and return to it again; they are incessantly in contact with the people; they *are* the people legally represented, as the *maires* and the prefects are these councils embodied, if I may so say, in one person. for the sake of activity and despatch. I regard, then, as another incontestable point, the necessary intervention of the municipal and departmental councils in the management of public instruction. As there ought to be a school in every *commune*, so there ought to be for every communal school a special committee of superintendence, which ought to be formed out of the municipal council, and presided over by the *maire.* I shall perhaps be told, that men who are fit to conduct the business of the *commune* are not fit to superintend the communal school. I deny it: nothing is wanted for this superintendence but zeal, and fathers of families can not want zeal where their dearest interests are concerned. In Prussia no difficulty is found in this matter, and every parish-school has its *Schulvorsland*, in great part elective. Over the heads of these local committees there ought to be a central committee in the chief town of each department, chosen out of the council of the department, and presided over by the prefect. The committee of each *commune* would correspond with the committee of the department; that is to say, in short, the *maire*, with the prefect. This correspondence would stimulate the zeal of both committees. By it, the departmental committee would know what is the annual supply of schoolmasters required for the whole department, and consequently, the number of masters the Normal School of the department ought to furnish, and consequently, the number of pupils it ought to admit. It would have incessantly to urge on the zeal of the local committees in establishing and improving schools, for the sake of providing as well as possible for the pupils it sends out of its Normal School. Nothing can be more simple than this organization. It is, applied to primary instruction, what takes place in the ordinary administration: I mean, the combined action of the municipal councils and the departmental councils,—of the *maires* and the prefects.

After the administrative authorities, it is unquestionably the clergy who ought to occupy the most important place in the business of popular education. The rational middle course is to put the *cure* or the pastor, *i. e.* the Catholic and the Protestant clergyman—and if need be both, on every communal committee; and the highest dignitary of the church in each department. on the departmental committee. We must neither deliver over our committees into the hands of the clergy, nor exclude them; we must admit them, because they have a right to be there, and to represent the religion of the country. The men of good sense, good manners, and of consideration in their neighborhood, of whom these committees ought to be, and will be, composed, will gradually gain ascendancy over their ecclesiastical colleagues, by treating them with the respect due to their sacred functions. We must have the clergy; we must neglect nothing to bring them into the path toward which every thing urges them to turn; both their obvious interest, and their sacred calling, and the ancient services which their order rendered to the cause of civilization in Europe. But if we wish to have the clergy allied with us in the work of popular instruction, that instruction must not be stripped of morality and religion; for then indeed it would become the duty of the clergy to oppose it, and they would have the sympathy of all virtuous men, of all good fathers of families, and even of the mass of the people, on their side. Thank God, you are too enlightened a statesman to think that true popular instruction can exist without moral education, popular morality without religion, or popular religion without a church.

The proceedings of the communal and departmental committees, the *maires* sub-prefects and prefects, ought, like all the other parts of the administration, to refer to one common center, from which a vigorous impulse and a supreme guidance may emanate, and upon whom all the responsibility before the chambers may rest. This center, in France, as in Prussia, is, the ministry and council of public instruction. This is not only according to law, but to nature and reason. It is perfectly consistent to leave primary instruction to the minister who has all the rest of public instruction, as well as ecclesiastical affairs, in his hands; that is to say, the two things with which the education of the people is the most intimately connected. Has any evil resulted from the present order of things? Far from it: every body is agreed that the minister and his council have done a great deal for primary instruction since the revolution of July. As you would have been able to effect nothing without the municipal and departmental councils, the *maires* and prefects, so those authorities acknowledge that they could have done little or nothing without your co-operation and direction. It is you who excited their zeal, who supported and encouraged them; you who, as the enlightened dispenser of the funds placed in your hands by the two chambers, have given vigor to public instruction by giving proportionate aid to necessitous places.

I strongly recommend the creation of a special inspector of primary instruction for each department. Our academical inspectors should be reserved for schools of the second class, which will suffice, and more than suffice, to employ all their powers, and all their diligence. Your natural agents and correspondents for primary instruction are the prefects, who would preside over the departmental committees, and to whom the correspondence of *maires* and communal committees, as well as the report of the departmental inspector, would be addressed.

The prefects would correspond officially with you, as they have hitherto done extra-officially; and there would be a councilor in the central council of public instruction, specially charged with the reports to be made on that portion of the business, as in fact there is now. This machinery is very simple, and would produce quick results; being less complex, it would work more freely. The only thing in which I would employ agents taken from the body of teachers would be, the commission of examination appointed for granting schoolmasters' brevets. No one disputes that professors have peculiar qualifications, and all the necessary impartiality, for that office. I should wish, then, that the examination-commission should be appointed by you, and composed of masters or professors of the royal or the communal *colléges* of the department; adding, for the religious part, a clergyman proposed by the bishop.

As to private teachers, and what people are pleased to call liberty of primary tuition, we must neither oppose it, nor reckon upon it. There are branches of the public service which must be secured against all casualties by the state, and in the first rank of these is primary instruction. It is the bounden duty of government to guarantee it against all caprices of public opinion, and against the variable and uncertain calculations of those who would engage in it as a means of subsistence. On this principle are founded our primary Normal Schools in each department, bound to furnish annually the average number of schoolmasters required by the department. We must rely exclusively on these Normal Schools for the regular supply of communal teachers.

But if, in the face of our primary communal schools, there are persons who, without having passed through the Normal Schools, choose to establish schools at their own risk and peril, it is obvious that they ought not only to be tolerated, but encouraged; just as we rejoice that private institutions and boarding-schools should spring up beside our royal and communal *colléges*. This competition can not be otherwise than useful, in every point of view. If the private schools prosper, so much the better; they are at full liberty to try all sorts of new methods, and to make experiments in teaching, which, on such a scale, can not be very perilous. At all events, there are our Normal Schools. Thus all interests are reconciled; the duties of the state, and the rights of individuals; the claims of experience, and those of innovation. Whoever wishes to set up a private school must be subject to only two conditions, from which no school, public or private, can on any pretext be exempt,—the brevet of capacity, given by the commission of examination, and the supervision of the committee of the *commune* and of the inspector of the department.

All these measures, on which I will not enlarge, are more or less founded on existing facts; they have the sanction of experience; it would be simply advantageous to add that of law. On all the points concerning which the law is silent, experiments might be made. Among these experiments some would probably be successful: when sufficiently long practice had confirmed them, they might be inserted in a new law; or *ordonnances* and instructions, maturely weighed by the royal council, would convert them into general and official measures. Nothing must pass into a law which has not the warranty of success. Laws are not to be perilous experiments on society; they ought simply to sum up and to generalize the lessons of experience."

On the experience of Prussia as a basis, a great and comprehensive measure of elementary education for France was framed by M. Guizot. The bill was reported in 1832. In introducing the measure to the consideration of the Chamber of Deputies, M. Guizot made a speech as remarkable for its eloquence as for its large and liberal views of popular education, as will be indicated by the following passages:

"In framing this bill, it is experience, and experience alone, that we have taken for our guide. The principles and practices recommended have been supplied to us by facts. There is not one part of the mechanism which has not been worked successfully. We conceive that, on the subject of the education of the people, our business is rather to methodize and improve what exists, than to destroy for the purpose of inventing and renewing upon the faith of dangerous theories. It is by laboring incessantly on these maxims, that the Administration has been enabled to communicate a firm and steady movement to this important branch of the public service; so much so, that we take leave to say, that more has been done for primary education during the last two years, (1831, 1832,) and by the Government of July, than during the forty years preceding, by all the former Governments. The first Revolution was lavish of promises, without troubling itself about the performance. The Imperial Government exhausted itself in efforts to regenerate the higher instruction, called secondary; but did nothing for that of the people. The restored Dynasty, up to 1828, expended no more than 50,000 francs annually upon primary instruction. The Ministry of 1828 obtained from the Chamber a grant of 300,000 francs. Since the Revolution of July, 1830, a million has been voted annually—that is, more in two years than the Restoration in fifteen. Those are the means, and here are the results. All of you are aware that primary instruction depends altogether on the corresponding Normal Schools. The prosperity of these establishments is the measure of *its* progress. The Imperial Government, which first pronounced with effect the words, Normal Schools, left us a legacy of one. The Restoration added five or six. Those, of which some were in their infancy, we have greatly improved within the last two years, and have, at the same time, established thirty new ones; twenty of which are in full operation, forming in each department a vast focus of light, scattering its rays in all directions among the people."

The Bill recognized two degrees of primary instruction, viz. elementary and superior, in speaking of which M. Guizot remarks:

"The first degree of instruction should be common to the country and the towns; it should be met with in the humblest borough, as well as in the largest city, wherever a human being is to be found within our land of France. By the teaching of reading, writing, and accounts, it provides for the most essential wants of life; by that of the legal system of weights and measures, and of the French language, it implants, enlarges, and spreads every where the spirit and unity of the French nationality; finally, by moral and religious instruction, it provides for another class of wants quite as real as the others, and which Providence has placed in the hearts of the poorest, as well as of the richest, in this world, for upholding the dignity of human life and the protection of social order. The first degree of instruction is extensive enough to make a man of him who will receive it, and is, at the same time, sufficiently limited to be every where realized. It is the strict debt of the country toward all its children.

But the law is so framed, that by higher elementary schools, primary instruction can be so developed, so varied, as to satisfy the wants of those professions which, though not scientific, yet require to be acquainted with 'the elements of science, as they apply it every day in the office, the workshop, and field.'"

On the plan of supervision of schools, which embraced both local and state inspection, the Minister remarks:

"In the first place, this operation demands, at certain times of the year, much more time, application, and patience, than can reasonably be expected from men of the world, like the member of the council of the arrondissement and of the department; or from men of business, necessarily confined to their homes, like the members of the municipal council. In the next place, positive and technical knowledge of the various matters on which the examination turns is absolutely necessary; and it is not sufficient to *have* such knowledge, it must have been proved to exist, in order to give to these examinations the requisite weight and authority. For these reasons, the members of these commissions ought to be, in great part, men specially qualified—men familiar with the business of tuition. It is evident that primary instruction rests entirely on these examinations. Suppose a little negligence, a little false indulgence, a little ignorance, and it is all over with primary instruction. It is necessary then, to compose these commissions with the most scrupulous severity, and to appoint only persons versed in the matter."

The necessity of providing for the professional education and training of teachers is thus eloquently set forth:

"All the provisions hitherto described would be of none effect, if we took no pains to procure for the public school thus constituted, an able master, and worthy of the high vocation of instructing the people. It can not be too often repeated, that it is the master that makes the school. And, indeed, what a well-assorted union of qualities is required to constitute a good schoolmaster! A good schoolmaster ought to be a man who knows much more than he is called upon to teach, that he may teach with intelligence and with taste; who is to live in a humble sphere, and yet to have a noble and elevated mind, that he may preserve that dignity of sentiment and of deportment, without which he will never obtain the respect and confidence of families; who possesses a rare mixture of gentleness and firmness; for, inferior though he be in station to many individuals in the *commune*, he ought to be the obsequious servant of none;—a man not ignorant of his rights, but thinking much more of his duties; showing to all a good example, and serving to all as a counselor; not given to change his condition, but satisfied with his situation, because it gives him the power of doing good; and who has made up his mind to live and to die in the service of primary instruction, which to him is the service of God and his fellow-creatures. To rear masters approaching to such a model is a difficult task; and yet we must succeed in it, or else we have done nothing for elementary instruction. A bad schoolmaster, like a bad parish priest, is a scourge to a *commune*; and though we are often obliged to be contented with indifferent ones, we must do our best to improve the average quality. We have, therefore, availed ourselves of a bright thought struck out in the heat of the Revolution, by a decree of the National Convention, in 1794, and afterward applied by Napoleon, in his decree, in 1808, for the organization of the University, to the establishment of his central Normal School at Paris. We carry its application still lower than he did in the social scale, when we propose that no school-master shall be appointed who has not himself been a pupil of the school which instructs in the art of teaching, and who is not certified, after a strict examination, to have profited by the opportunities he has enjoyed."

No statesman of any age or country, has expressed in language at once eloquent and just, a more exalted estimate of the mission of the teacher. Although not uttered in this connection, the following passages will illustrate the views presented above:

"Humble as the career of a schoolmaster may be, and though doomed to pass his whole existence most frequently within the sphere of a small community, his labors are, nevertheless, felt throughout society at large, and his profession is as important as that of any other public functionary. It is not for any particular parish alone, or merely local interest, that the law demands that every man should acquire, if possible, the knowledge which is indispensable in social life, and without which intelligence often languishes and degenerates; it is for the state itself and the public interest; it is because liberty is certain and steadfast only among people enlightened enough to listen, in every circumstance, to the voice of Reason. Public elementary instruction is one of the guarantees of order and social stability. Doomed to pass his life in discharging the monotonous duties of his vocation, sometimes even in struggling with the injustice or the ingratitude of ignorance, the parish schoolmaster would often repine, and perhaps sink under his afflictions, did he not draw strength and courage from another and higher source than that of immediate and mere personal interest. A deep sense of the moral importance of his duties must support and encourage him; and the austere pleasure of having rendered service to mankind, must become the worthy recompense which his own conscience alone can give. It is his glory to pretend to nothing beyond the sphere of his obscure and laborious condition; to exhaust his strength in sacrifices which are scarcely noticed by those who reap their benefit; to labor, in short, for his fellow-beings, and to look for his reward only to God.

Your first duty is toward the children confided to your care. The teacher is summoned upon by the parent to share his authority; this authority he must exercise with the same vigilance, and almost with the same affection. Not only is the health of the children committed to him, but the cultivation of their affections and intelligence depends almost entirely on him. In all that concerns education, as it is generally understood, you shall want for nothing that can be of service to you; but as to the moral education of the children, I trust especially to you. Nothing can supply for you, the desire of faithfully doing what is right. You must be aware, that, in confiding a child to your care, every family expects that you will send him back an honest man; the country, that he will be made a good citizen. You know that virtue does not always follow in the train of knowledge; and that the lessons received by children might become dangerous to them, were they addressed exclusively to the understanding. Let the teacher, therefore, bestow his first care on the cultivation of the moral qualities of his pupils. He must unceasingly endeavor to propagate and establish those imperishable principles of morality and reason—without which, universal order is in danger; and to sow in the hearts of the young those seeds of virtue and honor, which AGE, riper years, and the passions, will never destroy. Faith in Divine providence, the sacredness of duty, submission to parental authority, the respect due to the laws, to the king, and to the rights of every one—such are the sentiments which the teacher will strive to develop.

The intercourse between the teacher and parents can not fail of being frequent. Over this, kindness must preside: were a teacher not to possess the respect and sympathy of the parents, his authority over their children would be compromised, and the fruit of his lessons lost; he can not, therefore, be too careful and prudent in regard of these connections. An intimacy inconsiderately formed might injure his independence, and sometimes even mix him up with those local dissensions which frequently distract small communities. While civilly yielding to the reasonable demands of parents, he must, at the same time, be particularly careful not to sacrifice to their capricious exactions his educational principles, and the discipline of the school.

The duties of the teacher toward those in authority are still clearer, and not less important. He is himself an authority in his parish; how then can it be fitting that he give an example of insubordination? Wherefore should he not respect the magistracy, religious authority, and the legal powers, whereby public security is maintained?

The Mayor is the head of the community; the interest, therefore, as well as the duty of the schoolmaster, is to exemplify on every occasion the respect due to him. The vicar and pastor are also entitled to respect, for their mission is in accordance with all that is most elevated in human nature. Nothing, besides, is more desirable than a perfect understanding between the minister of religion and the teacher; both are in possession of moral authority; both require the confidence of families; both can agree in exercising over the children committed to their care, in several ways, a common influence."

With such enlarged views of the scope, and agencies, and ends of primary instruction, the bill was framed and introduced into the Chamber of Deputies and of Peers. It was referred to committees, who reported through M. Renouard in the lower, and M. Cousin in the upper house. These reports are full and elaborate discussions of great principles, and especially that of M. Cousin.

The bill, after going through a protracted examination and discussion of its details, received the sanction of the Chambers and the King, and became a law on the 28th of June, 1833. Under the wise and energetic administration of the department of public instruction, by such men as Guizot, Cousin, Villemain, and Salvandy, the system went into immediate and successful operation, giving a powerful impulse to the progress of popular intelligence throughout the whole domain of France. Experience has brought to light some imperfections and deficiencies, some of which have been remedied or supplied, and others are still under discussion. We must wait till a generation has passed through the course of instruction now provided by law, and come into active life, before we can fully appreciate the wise forecast of the labors of Cousin and Guizot in this long neglected field of primary education.

It should be added, that a private association, called "The Society for Elementary Instruction," was very instrumental in waking up the attention of the people and of government to the condition and improvement of primary schools. This society was formed in 1805, by a number of distinguished philanthropists, and has continued in active operation to the present time. It has been instrumental in establishing infant schools, schools for needle-work, adult schools and classes, reformatory schools, associations for teachers, village libraries in various parts of France, and has a complete series of popular schools under its immediate management, in Paris. The Minister of Public Instruction, in 1835, ascribed to it the honor of having given the first impulse to the present school law. It publishes a monthly journal of its proceedings, and was mainly instrumental in establishing, in 1830, the "Journal de l'Instruction Elémentaire," which is still continued under the title of "Manuel Général de l'Instruction Primaire," and is the official organ of the Minister of Public Instruction. There is also published another educational journal, called "L'Echo des Ecoles Primaires," devoted to the dissemination of improved methods of instruction. It commenced in 1837, and was for several years under the editorship of M. Cousin, assisted by many of the best teachers and educators in France. We noticed articles by Beudant, Willm, Parandiex, Philippar, and several directors of Normal Schools, and Inspectors of the Primary Schools. Upward of one hundred volumes on the science and art of education have been published in Paris since 1835; several of these are by men of the best intellect, and large practical and benevolent views.

OUTLINE

OF THE

SYSTEM OF PUBLIC INSTRUCTION IN FRANCE.

FRANCE is divided by law for municipal and all administrative purposes, into 86 Departments, 363 Arrondissements, 2,842 Cantons, and 39,381 Communes.

In each department there is appointed by the legal voters a prefect, who is associated with a general council for the department, and a special council for each arrondissement, in the administration of the local affairs of the department; in each canton there is a judicial office, styled *juge de paix;* in each commune, a mayor, with a municipal council, elected by the people.

Since 1808 there has existed in the government a central and special department for the administration of public instruction, for the application of all funds appropriated by the state for educational, scientific or literary purposes. Over this department has presided from time to time, some of the most distinguished scholars and statesmen of France, and no branch of the public service has been regarded, for the last thirty years, with more favor by the Chambers, or the people. Since 1824, the chief of this department has had a seat in the cabinet council of the king, which consists of nine members.

To the supervision of the department of public instruction, as now organized, are assigned all schools, primary, secondary and superior, which together constitute the University of France, and are directed and superintended in its name; all scientific and literary societies to the support of which the government contributes, such as the Institute, the Academy of Medicine, &c.; all public libraries, which the state maintains, or to which it contributes; all institutions having charters prior to 1808, and which were not by royal ordinance incorporated into the University; and all encouragements, by the way of subscription, or publication, to science and letters.

The *Royal University of France* embraces the whole system of national education, and includes all the institutions for imparting instruction which are spread over the whole kingdom, from the lowest schools, up to the highest colleges. The term may thus be considered synonymous with the French national system of education.

The University is placed under the direction of a council of six members, called the "royal council of public instruction," of which the minister of public instruction is the official president. Each councilor has the special charge of one or more divisions of public instruction. Subordinate to this council are the inspectors-general of the University, who are required to examine, once a year, the institutions of every description, each within a certain district assigned to him, and to transmit a report to the council.

The University is composed of twenty-six *Academies*, each of which comprehends two, three, or more of the departments into which the kingdom is divided, and contains one or more royal colleges. The presiding officer of each academy is the rector, who is appointed by the minister of public instruction, and is assisted by two inspectors and a council. The governing body of each academy has the superintendence of all the communal colleges, institutions, *pensions*, (boarding schools,) Normal Schools, or schools for the education of teachers, and primary schools, within the district which the seminary comprehends.

Besides the superintending body, the academy includes the teaching corps, or faculties; namely, the faculties of letters, science, medicine, law, and theology, all of which, however, do not actually exist in every academy; in some indeed, there is no organization of faculties. The faculties consist of a variable number of professors, one of whom is dean, and a committee of whom examine candidates for degrees. There are, however, some institutions which are not subject to the jurisdiction of the University; as the College of France, the Museum of Natural History, the *Ecole des Chartes*, School of Oriental Languages, the French Institute, and societies of all kinds for the advancement of knowledge.

The royal colleges are supported chiefly by the government, and the salaries of the professors, which are generally from $400 to $800, are paid from the budget of the minister of public instruction. The students are divided into two classes, the *internes* and *externes*, or boarders and day-scholars. The communal colleges are supported principally by the communes in which they are situate; some of them have endowments, but the majority depend chiefly for their support on the fees paid by the students. The professors or teachers receive but small salaries, varying from $200 to $600.

A distinguishing feature of the system of public instruction in France, is the appointment of all professors in all the colleges and lyceums, and in the faculties of law, medicine, theology, and letters, and all institutions of education above the primary school, by public competition (*les concours.*) A concours may last a few days only, or it may last for months. The months of September and August are the months of vacation in the different colleges, and are usually devoted to the public competition of candidates for any professorship or chair declared to be vacant by the minister of public instruction. The judges are selected from among the most distinguished scholars in France. The mode of conducting the trial varies with the department to be filled. But it embraces every mode by which the accuracy and extent of the attainments ot each candidate in the study can be tested, as well as his ability to communicate his knowledge to classes of pupils. Each candidate is subject to the criticism of his competitor. Every professor in all the colleges and great schools of France has passed through this ordeal.

Nearly all the higher schools of learning and science are concentrated in Paris. Almost all the young men who want to complete their studies, whether in letters, law, medicine, or the arts,—in short, in all those preparatory to any learned or liberal career, are forced to live in the capital. This is attended with a disastrous result, in the neglect or discontinuance of all domestic training and discipline, which can not be compensated by any superiority of mental culture, secured by the concentration of able men, and all the means and appliances of superior education at the capital.

There are six faculties of *Catholic theology*, at Aix, Bordeaux, Lyons, Paris, Rouen, and Toulouse; and two of *Protestant theology*, one of the Lutheran or Augsburg confession, at Strasburg, and another of the Calvanist or Helvetic confession, at Montauban, under the academy of Toulouse.

The faculties of law are nine, at Aix, Caen, Dijon, Grenoble, Paris, Poitiers, Rennes, Strasburg, and Toulouse. There are three faculties of medicine, at Grenoble, Paris, and Montpellier; with seventeen secondary schools of medicine.

The faculties of science are nine in number, at Paris, Bordeaux, Strasburg, Caen, Toulouse, Montpellier, Dijon, Lyons, and Grenoble; those ot letters or literature, seven, at Paris, Strasburg, Bordeaux, Toulouse Caen, Dijon, and Besançon.

In order to become a student in law or theology, a person must have taken the degree of bachelor of letters; and a course of three years in either faculty, is requisite to obtain the degree of bachelor; for the degree of doctor, four years; and to obtain the degree of doctor in divinity, the candidate must defend a final and general thesis. Candidates for the degree of doctor in medicine, must have taken the degree of bachelor of letters, and also of sciences, and must complete a course of four years. The faculties of law and medicine at Paris, are greatly distinguished. The former has sixteen professors, and had, in 1836, upward of 3000 students: the latter, twenty-seven professors, and in 1836, about 4000 students.

The law ordains at least one elementary school in every commune, and those communes in which the population exceeds 6000, are required to support one superior primary school, and are aided in opening infant schools, evening schools, classes for adults, and high schools.

Where the number of families of different sects is sufficient, the minisister of public instruction is authorized to grant permission, if advisable so to do, to the commune to establish separate schools for the children of each denomination.

By a law passed in March, 1841, the duty of school attendance is made obligatory. No young person below the age of twelve years can be employed in any workshop or manufactory, unless his parents or guardians testify that he actually attends some public or private school within the locality, and all such as were so employed at the date of this law, were required to attend school till the age of twelve. All young persons above the age of twelve can be excused from attending a school, only in case a certificate can be given by the Mayor of their place of residence, that they have received the primary or elementary instruction. To meet the wants of those adults, who have grown up without the advantages of school attendance, evening schools, and classes for adults, are established and provided for, by law.

The central government, the departmental authorities, the municipal authorities, the religious authorities, the heads of families, have each their sphere of action, and their influence in the administration of primary schools.

The local management of a primary school is intrusted to a committee of the commune, consisting of the mayor, the president of the council, the *cure*, or pastor, and one person appointed by the committee of the arrondissement in which the commune is situated.

The general supervision of the schools of each arrondissement is assigned to a committee of the arrondissement, which consists of the mayor of the chief town, of the *juge de paix*, a pastor of each of the recognised religious sects, a professor of a college, or school of secondary instruction, a primary schoolmaster, three members of the council of the arrondissement, and the members of the council-general of the department who reside in the arrondissement.

These committees meet once a month. The communal committees inspect and report the condition of the schools in the commune to the committee of the arrondissement. Some member of the committee of the arrondissement is present at each local inspection, and a report of the whole committee on the state of education in the arrondissement is made annually to the minister of public instruction.

In each department there is a commission of primary education, composed of at least seven members, among which there must be a minister of each of the religious denominations recognized by law, and at least three persons who are at the time, or have been, engaged in teaching public schools of secondary instruction. This committee is charged with the examination of all candidates for the certificate of qualification to teach primary schools, or to enter the Normal School of the department. These examinations must be public, at a time fixed, and notified by the minister, and in the chief town of the department. The examination is varied according to the grade of school for which the candidate applies. With a certificate of capacity from this commission, the candidate can teach in any commune in the department, without any local examination.

Besides these local committees the minister of public instruction appoints an inspector for every department, with assistant inspectors, when required by the exigences of the public service. The duty of the inspector is to visit every school in the department, at least once a year, and to inquire into the state of the school-house, the classification, moral character, and methods of discipline and instruction of each school. He must leave a written memorandum of all deficiencies noted in his visit, for the use of the local committee, and report annually to the prefect of the department, and through him to the minister. This stimulates and encourages teachers, as well as communes, and informs the minister of the true wants of different localities, as well as the deficiencies of the law. The inspectors are required to pay particular attention to the Normal Schools in their several departments. The inspector has a salary of two thousand francs, and an allowance of three francs a day for traveling expenses, and one franc for every school visited. In 1843 there were eighty-seven inspectors, and one hundred and fourteen sub-inspectors; and the number of communes visited by them in that year, was 30,081, making 50,986 visits to schools.

The resources of the state, the departments, the communes, and the contributions paid by parents, combine to insure the creation and maintenance of the school. Every commune must provide a school-house and residence for the school-master, and to the first expense of this outfit, the state contributes one third. Every teacher must have a lodging, or its equivalent in money, and a fixed salary of 200 francs, or 400 francs, (from $40 to $80,) according to the grade of school, in addition to the monthly fees paid by parents, and collected by the commune. If the commune refuses, or neglects to provide by tax on the property of the commune, the government imposes and collects the same. If the commune, on account of poverty or disaster to crops or depression in business, can not raise its necessary sum, the department to which it belongs must provide it, and if the revenues of the department are not sufficient to supply the deficiencies of all the communes, the deficit must be supplied by the state. In every department, the prefect and general-council, annually draw up in concert a special estimate in which the expense of primary instruction is fixed, and necessary revenue provided. In each commune, the Mayor and municipal council make a special estimate of the same kind; and at the same time fix the monthly tuition-fee to be paid by each parent.

Every department must by itself, or in concert with adjoining departments, support a Normal School, to supply the annual demand for teachers of primary schools. The sum to be expended on a Normal School, for the salaries of teachers, apparatus, and bursaries, or scholarships in aid of poor pupils, is not left with the department to fix, but is regulated by the council of public instruction. The salary of the Director is borne by the state and department combined; that of the assistant teachers by the department. The expense of the normal pupils for board is borne by themselves, unless they enjoy an exhibition or scholarship, founded by the state, department, university, commune, or by individual benevolence. The scholarships are sometimes divided so as to meet, in part, the expense of two or three pupils. In 1816, there were ninety-two Normal Schools, seventy-six of which were for the education of schoolmasters, and sixteen for the education of schoolmistresses. To fifty-two of these schools enough land is attached to teach agriculture and horticulture.

The course of instruction in these elementary schools, embraces Moral and Religious Instruction, Reading, Writing, the elements of Arithmetic, elements of the French Language, legal system of Weights and Measures, Geography. (particularly of France,) History, (particularly of France,) Linear Drawing, and Singing. In the superior primary schools, or High School, the above course is extended so as to embrace Modern Languages, Book-keeping, Perspective Drawing, Chemistry, and the Mathematics, in their application to the arts. There is a special course of instruction open in evening schools, to those children and youth who can not attend the day school; and in evening classes for adults, whose early education was neglected, or who may wish to pursue particular studies connected with their pursuits as artizans, manufacturers, and master-workmen.

Provision is made to encourage teachers to form associations, and to hold frequent conferences for improvement in their professional knowledge and skill, and to found libraries of books on education.

In each department a fund is accumulating for the relief of aged teachers, and of the widows and children of teachers, who die in the exercise of their important functions. Each master must subscribe one twentieth part of the salary he receives from the commune; and the sum-total which he subscribes, together with the interest upon it, is returned to him when he retires, or to his widow and children, when he dies.

The government awards medals of silver and bronze to those masters who distinguish themselves in the management of their schools. This encourages and stimulates them to continued efforts, and connects them in an honorable way, with the government and the nation.

The whole charge to the State of the department of public instruction, according to the Budget of 1838. was 19,005,673 francs, or nearly $4,000,000, which was distributed as follows:

	Francs.
Central Administration,	686.623
General Services,	238,000
Department and Academic Administration,	919.900
Superior Instruction, faculties,	1,972 050
Secondary Instruction,	1,655.600
Elementary Instruction, general fund,	1,600.000
do. do. additional,	3,500,000
Primary Normal School,	200,000
Literary and Scientific establishments,	7,676.500
Subscriptions to Literary Works, &c.	557,000
Total,	19,005,673
	or $3.800.354.

This does not include the sum to be raised in the departments and communes, or contributed by parents.

From the reports of the Minister of Public Instruction, for 1843, it appears that in the ten years, from 1833 to 1843, France expended the sum of £2,565,883 (about $11,000,000.) on the erection of school-houses, and residences for teachers. In 1843, the expenditure for the current expenses of her educational establishments was a little short of $4,000,000, independent of the sum paid by the communes, individuals, and parents in school fees, which amount to near $5.000,000. Even this sum was found insufficient, and since that date the appropriation has been increased. In 1833 there was one person in every eighteen of the population, receiving education, while in 1843, there was one in every ten. But the primary schools are far from reaching the excellence which characterizes the elementary schools of Germany. Much is yet to be done to carry out the liberal provision of the law.

In a late Report, (1849,) on the state of common school instruction in Germany, to the President of the Society for Elementary Instruction in France, by A. Hennequin, late inspecteur d'academie, the following five questions are all answered in the affirmative, by the author:

Is the inspection of schools better practised in Germany than in France?
Are the common schools in Germany superior to ours?
Are the people in Germany better instructed than in France?
Are the German teachers superior to the French teachers?
Are the methods of instruction in Germany better than ours?

A volume of 756 pages was published at Breslau, in 1848, by L. Hahn, on the schools and school-system of France. The author has resided many years in Paris, as a teacher, and has had access to the latest official information. Although much has been done since 1833, to improve the primary schools, the author thinks that their condition in respect to school-houses, attendance of children, universality and quality of instruction given, and the qualifications, social and pecuniary position of the teachers, is far behind that of the same grade of schools in Germany. The Normal Schools are accomplishing much good, but they have not been able yet to supply a majority of the communes with well-trained teachers. The Normal Schools at Versailles, and Strasbourg, are pronounced the best in France, and the latter especially, is regarded as making the nearest approach to the best teachers' seminaries in Germany

The following tables will exhibit the working of this great system of public instruction in several important particulars.

TABLE I.

EXHIBITING THE NUMBER OF SCHOOLS EMBRACED IN THE UNIVERSITY OF FRANCE IN 1837.

Academies.	Departments	Royal Colleges	Professors.	Internal Students.	External Students.	Communal Colleges.	Institutions	Boarding Schools.	Normal Schools.	Primary Schools.
Aix,	4	1	14	160	230	16	5	41	2	1,659
Amiens,	3	1	12	121	180	10	2	50	2	2,697
Angers,	3	1	12	118	110	18	1	17	2	1,212
Besancon,	3	1	12	110	160	15	2	21	—	1,671
Bordeaux,	3	1	13	170	120	7	5	54	2	1,209
Bourges,	3	1	12	129	120	9	1	21	1	532
Caen,	3	1	15	212	290	16	1	25	3	2,340
Cahors,	3	2	22	90	160	9	1	47	2	1,451
Clermont,	4	3	42	287	292	12	—	30	4	1,121
Dijon,	3	1	13	88	150	20	—	36	2	1,855
Donai,	2	1	12	131	110	21	6	43	1	2,643
Grenoble,	3	1	14	133	141	7	4	25	2	1,120
Limoges,	3	1	11	88	220	9	5	18	3	264
Lyons,	3	1	20	276	264	6	10	52	3	1,470
Metz,	2	1	15	190	240	5	1	26	2	1.541
Montpelier,	4	2	23	199	256	17	2	36	—	1,766
Nancy,	3	1	14	110	260	15	—	25	3	2.444
Nimes,	4	3	39	365	226	10	2	26	4	1,594
Orleans,	3	2	24	241	286	5	3	31	2	730
Paris,	7	7	180	1629	3324	19	77	251	5	4,203
Pau,	3	1	12	57	90	10	1	32	—	1,734
Poictiers,	4	1	15	130	201	14	4	31	1	1,536
Rennes,	5	3	33	346	407	18	3	35	2	941
Rouen,	2	1	17	164	491	9	3	68	2	1,712
Strasburg,	2	1	14	121	203	12	1	15	2	1.543
Toulouse,	4	1	15	112	239	9	6	55	2	1,327
Total.	86	41	626	5779	8870	318	146	1114	54	42,318

TABLE II.

SHOWING THE CONDITION OF PRIMARY EDUCATION IN THE DIFFERENT COMMUNES, IN 1843.

Number of arrondissements	363
Number of communes	37,038
Population	34,230,178
Number of communes provided with a primary school	34,578
Population of the communes provided with primary schools	33,080,002
Number of communes not yet provided with a primary school	2,460
Population of the communes not yet provided with primary schools	1,150,176
Number of communes who require several primary schools, and who possess only one	23
Number of communes who are required by law to support one superior primary school	290
Number of communes who ought to support superior primary schools, and who do support them	222
Population of these communes	4,177,047
Number of communes who ought to support several superior primary schools, and who support only one	23
Number of communes who are not required by law to support a superior primary school, and who do support one	103
Total number of primary schools, elementary and superior, for boys and girls, established in France in 1843	59,838
Total number of primary schools in the 86 departments of France, visited in 1843 by the 87 inspectors and 113 sub-inspectors	50 936

In addition to these schools for the youth there ought to be added 6,434 classes for the laborers, which are conducted by the primary school teachers in the evenings, after the day's work, or on the Sunday, and in which 95,064 adult laborers received instruction in 1843; and also a great number of infant schools which have been recently opened in the departments, and which are receiving great encouragement and attention from the Government.

TABLE III.

SHOWING THE NUMBER OF PRIMARY SCHOOLS BELONGING TO THE DIFFERENT SECTS.

Primary schools specially set apart for the Roman Catholics	Public schools	Boys	33,207	40,867	56,812
		Girls	7,660		
	Private schools	Boys	7,098	15,945	
		Girls	8,847		
Primary schools specially set apart for the Protestants	Public schools	Boys	702	761	1,080
		Girls	59		
	Private schools	Boys	163	39	
		Girls	156		
Primary schools specially set apart for the Jews	Public schools	Boys	33	37	115
		Girls	4		
	Private schools	Boys	74	78	
		Girls	4		
Mixed schools open for all three sects	Public schools	Boys	948	1,055	1,831
		Girls	107		
	Private schools	Boys	326	776	
		Girls	450		
Total number of Primary Schools in France, in 1843					59,838

The number of the Roman Catholic population of France being 33,050,178, it follows, (see Table I.,) that in 1843, there was one primary school for every 581 Roman Catholics.

The number of the Protestant population of France being 1,000,000, it follows, that in 1843, there was one primary shool for every 1,018 Protestants. The reason why the proportion of schools for the Protestants to their numbers is so small is, that very many of this sect attend the mixed schools.

The number of Jews being 80,000, it follows, that there was one school for every 695 Jews.

TABLE IV.

SHOWING THE NUMBER OF CHILDREN IN ATTENDANCE AT THE PRIMARY SCHOOLS OF FRANCE, IN 1843.

Number of Scholars at the Public Elementary Primary Schools for Boys,		
Directed by Lay Schoolmasters, ...	1,699,586	1,857,017
" " Schoolmasters, members of Religious Societies, ...	157,431	
Number of Scholars at the Public Superior Primary Schools for Boys,		
Directed by Lay Schoolmasters, ...	15,092	15,448
" " Schoolmasters, members of Religious Societies, ...	356	
Number of Scholars at the Public Schools for Girls,		
Directed by Lay Schoolmistresses, ...	230,213	534,960
" " Schoolmistresses, members of Religious Societies, ...	304,747	
Number of Scholars at the Private Elementary Primary Schools for Boys,		
Directed by Lay Schoolmasters, ...	230,383	272,935
" " Schoolmasters, members of Religious Societies, ...	42,552	
Number of Scholars at the Private Superior Primary Schools for Boys,		
Directed by Lay Schoolmasters, ...	3,469	4,272
" " Schoolmasters, members of Religious Societies, ...	803	
Number of Scholars at the Private Primary Schools for Girls,		
Directed by Lay Schoolmistresses, ...	278,637	479,665
" " Schoolmistresses, members of Religious Societies, ...	201,028	
Total number of Scholars at all the Primary Schools,		
Directed by Lay Schoolmasters or Schoolmistresses,	2,457,380	3,164,297
" " Schoolmasters or Schoolmistresses, members of Religious Societies, ...	706,917	
Total number of children attending the Primary Schools in 1843,		3,164,297
Total number of children admitted gratuitously into the Communal Schools in 1843, ...		763,820
Total number of children who paid something monthly for their education in 1843, ...		2,400,447

TABLE V.

SHOWING THE NUMBER AND CONDITION OF THE CLASSES FOR ADULTS, FOR YOUNG GIRLS, AND FOR YOUNG APPRENTICES IN FRANCE, IN 1843.

Number of classes for Adults,		6,434
" " " Young Girls,		160
" " " Apprentices,		36
Number of Infant Schools,		
Public,	685	1,489
Private,	804	
Number of Scholars,		
In the classes for Adults,	95,064	108,432
" " Young Girls,	5,908	
" Schools for Apprentices,	1,268	
" Infant Schools,	96,192	
Number of communes in which there are Adult Classes,	6,043	
Number of Adult Classes,		
for Men,		6,266
" Women,		168
Number of persons who frequent them,		
for Men,		9.451
" Women,		4,613
Number of Classes directed by		
Schoolmasters belonging to a Religious Society,		125
Schoolmistresses, " " " "		51
Number of Adult Classes in which are taught		
Moral and Religious Instruction,		3,331
Reading,		5,035
Writing,		4,483
Arithmetic,		4,456
System of Weights and Measures,		3,857
Linear Drawing,		271
Vocal Music,		107
Resources of these Classes,		Francs.
Sums furnished by the Communes,	136,836	201,886
" " " Departments,	38,350	
" " " State,	26,700	

TABLE VI.

SHOWING THE NUMBER AND COURSE OF INSTRUCTION IN THE NORMAL SCHOOLS OF FRANCE, IN 1843.

Number of Normal Schools thoroughly organized,	78
Number to which a garden is joined for the purpose of teaching the pupils the culture of trees,	52
Number of Professors in these schools,	495
" " including the Directors,	573

Number of hours devoted weekly to the different branches of education:	1st Year.	2d Year.	3d Year.
Moral and Religious Instruction	2¾	2¾	2¾
Reading,	3¾	3	2
Writing,	4½	4¼	4
Study of the French Language,	6	5½	4¾
History and Geography,	3¼	4½	3½
Arithmetic,	5	3½	3
Use of the Globes,	2	2¼	2
Elements of Practical Geometry,	4	3½	3¼
Elements of Physics and Natural History,	2¾	2¾	3½
" Mechanics,	2	2¼	3
" Surveying,	2	2¼	3
Linear Drawing,	3½	4	4½
Methods of teaching,	1¾	1¾	2¼
Vocal Music,	3½	3¼	3½
Civil Law,	2	1½	1½
Culture of Trees,	1¾	1¾	1¾

TABLE VII.

SHOWING THE STATE OF SECONDARY EDUCATION IN 1843.

Number of Colleges. Royal,	46	358
" " Communal,	312	
Number of Scholars in Colleges		44,091
Number of Institutions of Secondary Education,		102
" Boarding Schools " "		914
" Private Establishments " "		1,016
" Public and Private " " "		2,390
Number of Scholars in the Institutions which follow the course of a College,	6,066	31,316
Number of Scholars in the Institutions which do not follow the course of a College,	25,250	
Number of Secondary Pupils,		69,341
Population of the Departments, 1842,		34,194,875
Proportion in each Department between the population and the total number of establishments of Secondary Education,		1 estab. for 24,887
Number of Scholars in establishments of Secondary Education,		1 " " 493
Number of Young Men between eight and eighteen in each Department,		3,182,397
Proportion between the total number of Young Men between eight and eighteen, and the total number of pupils in Secondary Establishments in each Department,		1 school for 45 young men.

CONDITION OF PRIMARY INSTRUCTION

IN THE

DEPARTMENT OF TARN, DURING THE SCHOOL YEAR 1849-50.

THE most satisfactory insight into the practical working and actual results of a school system, can be obtained, not by looking to any general summary applicable to the whole State, but to the operations in detail, of a particular school, or of the schools of a neighborhood, or of some of the larger and yet subordinate divisions of the State. For this purpose we select for publication a report on the condition of primary education, by M. A. Domergue, the governmental inspector for the department of Tarn—one of the 86 territorial and civil divisions of the State. Tarn belongs to the old province of Languedoc, and in 1852 had a population of 363,000, distributed through 4 arrondisements, 35 cantons, and 315 communes. In 1828, when M. Charles Dupin projected his intellectual map of France, the department of Tarn was represented by a black spot, to indicate its low state as to schools and education. The report does not cover the whole ground, but shows the progress which has been made in one of the most backward portions of France since the new system went into operation.

Primary instruction includes the elementary and superior, the communal and private schools. Some of these are attended exclusively by boys, some by girls, and some by infants, while others are *common** schools; that is, attended by both boys and girls. There are also classes for adults, a primary normal school for masters, and another for schoolmistresses.

BOYS' SCHOOLS.

There are altogether in the *department* 309 communal and 40 private schools. This gives a total increase of 8 schools over the year 1848. But there have been at the same time an increase of communal and a decrease of private schools. This result is doubly advantageous; for, with few exceptions, the public schools are superior to private schools, both as regards instruction and discipline.

With respect to the *mode of instruction*, the 349 boys' schools are thus divided:—Schools directed according to the mutual mode, 12; simultaneous, 261; individual, 21; mixed† mode, 55; total, 349. This last mode is the best that can be employed in the schools which have more than 50 pupils; it demands, on the part of the master, indefatigable zeal, but it gives, in exchange, most beneficial results.

There are 314 schools exclusively devoted to Roman Catholics, and 18 to Protestants, whilst 17 schools receive children belonging to both. The directors of these 17 schools are all Roman Catholics.

Civil State of the Teachers.—Of the 349 instructors, 336 are laymen, and 13 belong to religious societies. There are also employed in the schools 49 assistant-brothers. Of the 336 lay teachers, 117 are bachelors, 196 are married, and 23 are widowers.

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* Schools where boys and girls are taught together, are generally termed in this country *mixed schools*. Common schools are *public* schools in our school nomenclature.

† This is a combination of the *mutual* and the *simultaneous*.

Number of Pupils, &c.—The communal schools receive 11,882 boys; the private schools, 1,981; in all, 13,863. If to this number we add 217 boys who attend the *common schools*, we shall have a total of 14,080 boys, thus showing an increase of 807 over the year 1848.

Besides the 13,863 boys admitted into the 349 schools, there are also taught, by the masters of the common schools, 1,234 girls.

Of the 14,080 boys, 7,943 pay a school fee, which varies from fivepence to twenty pence a month; 6,137 are instructed gratuitously. The number of gratuitous pupils it is hoped will increase; for the 24th article of the law of the 13th March, 1850, states that "*primary instruction ought to be given gratuitously to all children of those families who are not in a condition to pay for such instruction.*"

Moral and Political Conduct of the Teachers.—The conduct of our instructors is generally very good. With some exceptions, happily few in number, they have all learned that they ought to confine themselves exclusively to the discharge of the duties belonging to their profession, and not to engage in political or municipal discussions.

We can not speak so satisfactorily of the capacity of our teachers. Besides those who have been educated at the Normal School, and whose schools are of a superior order, there are a hundred instructors who were *breveted* immediately after the promulgation of the law of June 28th, 1833. These know, in general, very little; they are ignorant of good methods of teaching, and their schools are conducted with little order and regularity. But they have rendered services, and although they are not at the top of their profession, yet it would be unjust to hurry on their superannuation.* The law which assures to instructors a minimum salary of 600 francs ($125,) will enable us to demand of them more zeal and assiduity. They will not require to seek, in labors foreign to their profession, an increase of pay to assure the daily existence of themselves and their families. But 19-20ths of the instructors of this department will not be able to claim more than the fixed minimum allowance. It is to be regretted that we can not, by means of salaries increasing progressively in proportion to the services performed, excite the emulation of teachers and establish a system of promotion advantageous to the cause of education.

GIRLS' SCHOOLS.

There are in the department 54 communal and 163 private schoolmistresses. The increase on 1848 is 18 in number.

The communal schools receive 3,669, and the private schools 5,662 pupils; in all 9,331. When compared with the numbers attending school in 1848, there is a decrease of 151 pupils. If we add to the above number 1,234 girls who are taught in the common schools, we shall have a total number of 10,565 girls receiving elementary instruction.

Of the 9,331 who are taught by schoolmistresses, 6,674 pay, and 2,657 are educated gratuitously.

Of the 1,234 who attend the common schools,† 941 pay, and 293 receive gratuitous instruction.

The communal masters alone receive pupils who pay nothing; the private teachers receive none. All the schoolmistresses, on the contrary, whether communal or private, admit gratuitously a great number of children.

There is no need to direct your attention to the fact, that the zeal and the devotion of our schoolmistresses are not sufficiently recompensed. Every one is fully convinced of the salutary influence which the education of females exercises upon the morality of a country. We ought, therefore, to find some means of properly rewarding our schoolmistresses for the eminent services which they have rendered. It is necessary, above all, to encourage the establishment of girls' schools, in order to diminish, as much as possible, the number of *mixed schools*, which, in spite of the most careful superintendence, present results most unfavorable. As a proof of the low estimation in which these *mixed* schools are held, take the following facts:--In those *communes* which possess a *girls'* school, the mean number of pupils attending is 64 per *commune;* whereas, in the communes having no girls' school, but, on the contrary, a *boys'* school open to girls, the mean number is reduced to nine.

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* By a recent law a retiring pension is granted to teachers in proportion to their length of service.

† These common or mixed schools are conducted by *masters*.

There are 189 communes entirely without schoolmistresses; that is to say, in 189 communes of the department the girls are either wholly deprived of instruction, or receive an education which, from being given by a man, is not at all in harmony with the duties imposed upon the sex by society.

From these considerations, I have the honor of proposing to you to ask of the general council the sum of 2000 francs, to be appropriated thus—1000 francs among private schoolmistresses, many of whom find it difficult to live, and 1000 francs to be divided among the poorest of the communes which shall make sacrifices to establish communal schools for girls.*

Children attending the Schools.—Out of 1000 inhabitants, 68 children, on an average, attend the primary schools. In 1839, there were only 55 out of 1000: the progress, then, is real. We are, however, below the average which, for the whole of France, is about 92 in 1000; while some of the departments, such as that of Doubs, count 176 pupils out of every 1000 inhabitants. The number of children between 6 and 14 years of age, who do not actually attend the primary schools, may be reckoned at 20,000. Many of these have already left school, carrying with them notions the most imperfect, which they will very soon completely forget. The great majority are condemned to absolute ignorance.

School Houses.—The law of 28th June, 1833, compels communes to provide suitable buildings which shall serve both as school-rooms for the children, and dwelling-houses for the masters. The law of 15th March, 1850, has preserved this obligation. Communes are also advised to become the owners of school-houses; and in 1848 they possessed 86 school-houses, while at the present day they have 99. About 15 new school-houses may be reckoned which shall be completed during the next year. Every where, in the course of my inspection, I have ascertained that *the places rented by the communes to serve as schools and teachers' residences are unhealthy, badly ventilated, insufficiently lighted, inconvenient, and inadequate; whilst some are in a completely dilapidated condition.*

Purchase of Books for the Poor.—Rural schools are entirely without good books. Poverty prevents many parents from purchasing such books as are necessary for their children, or it makes them select, not those which the teacher indicates to them, but those which itinerant booksellers sell them at a very small cost. Serious inconveniences result from this state of things. I believe that it is necessary to provide in the *budget* a grant of 500 francs for the purchase of books for poor scholars.

Assistance to Old and Infirm Teachers.—The aged instructors have spent their strength in the career of primary instruction—an office, up to the present time, so badly remunerated. They are now worn out, and will suffer all the horrors of poverty, unless the department render them assistance. I solicit for them an allowance of 500 francs. This sum will annually diminish, and, finally, will disappear from the departmental budget; since the new law in reference to education assures to instructors a retiring pension in proportion to a duration of their services.

Infant Schools.—The department contains 9 infant schools for boys and girls, containing a total of 1001 children.

Normal School.—The excellent condition of this establishment continues to deserve the praises which have been bestowed on it by the general council of the department, the academic authorities, and the general Inspectors of the University.

The satisfactory results which it is permitted me to state, are owing to the unbounded devotion and untiring zeal of the director of the school; to the strict discipline which he maintains with vigor; to his constant presence at all the exercises of the house; to the religious punctuality which is every where manifest, and which is the best precept on order and regularity which it is possible to give to our future instructors.

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* Every commune is obliged by law to support at least one primary school, either of its own, or in conjunction with neighboring communes.

The normal school has rendered immense service to the country: it has given us our best instructors; it has raised, to a considerable extent, the love of popular instruction; thanks to it, above all, should M. Charles Dupin trace out again the intellectual map of France, we shall behold the *black spot* disappear by which the illustrious statistician had stigmatized the department of Tarn.

Since 1833 the normal school has produced 174 instructors; of these 120 are communal teachers, and 9 are about to become so; 1 is assistant master in the normal school; 3 are private instructors; 27 have left the profession; 14 have died in the exercise of their duties; total 174 who have obtained their *brevet* on leaving the school.

The teachers who have come from the normal school are infinitely superior to their colleagues. They are superior by their capacity—by their faithful observances of rules—and, almost always, by their zeal, and by their conduct towards the local authorities and the heads of families. In the course of my inspections, I have been constantly struck with the marked difference which exists between the teachers who have been educated at a normal school and those who have not been in any special way prepared for the duties of instruction. People partake of my convictions, in this respect; and normal students are always chosen, in preference to other candidates, by local committees and municipal councils.

Normal School for Females.—The opinion which I have formerly expressed of the importance which I attach to the good education of girls, will, I trust, be sufficient to make you appreciate the strong desire which I have for the continuance of exhibitions for female candidates. The normal school is in excellent condition, and the results obtained are satisfactory. At the last examination, out of 13 who presented themselves, 3 were *breveted* with the numbers 2, 4, and 6.

Such is a faithful and impartial account of the state of primary instruction in the department of Tarn. I have endeavored to give, by figures obtained from authentic sources, the results due to the law of 28th June, 1833, and at the same time to establish the starting-point of the law of 15th March, 1850; so that it may be easy, at a later period, to estimate the benefits which the department may have derived from it.

IV. SCHOOLS AND INSTITUTIONS

OF

SPECIAL INSTRUCTION IN FRANCE.

In addition to the regular institutions for primary, secondary, and superior instruction, which belong to the supervision of the Minister of Public Instruction, there are a number of schools of the class preparatory for the pursuits of life, which are assigned by law to other departments of the government. The Polytechnic School, the Military School of St. Cyr, and the Military College of Fleche, are assigned to the Minister of War; the School of Roads and Bridges, the two Schools of Mines, one at Paris and the other at St. Etienne, to the Minister of Public Works; the Model Farm Schools, the District Schools of Agriculture, and the National Agronomic Institute at Versailles, the School of Arts and Manufactures at Paris, Châlons, Angers, and Aix, to the Minister of Agriculture and Commerce; the Naval Schools at Brest and L'Orient, to the Minister of the Marine; the Conservatory of Arts and Manufactures, and of Music, to the Minister of the Interior. These schools properly belong to the division of superior instruction, which is not embraced, except in a general view, in the plan of this Report, but as they are intended to complete the course of studies begun in the higher schools and academies of our systems of public instruction, and as they furnish useful hints, both as to studies and their applications, for similar institutions in this country, whether public or private, an account of several of the most important of this class, will be given.

France is better supplied with schools of special instruction and voluntary and incorporated societies for the promotion of literature, science, and the arts, as well as with various forms of active philanthrophy, than any other country in Europe. The stimulus given to the universal mind of France, by the political revolutions which have changed the whole face of modern society, while it has made elementary education more general and active, has also given progress to higher studies, and great scientific undertakings.

In addition to 36 learned societies in Paris, recognized and aided by governmental grants—besides a multitude of others unchartered and but little known either to one another, or the public—there were in 1851, in the departments of France 189 learned societies, besides twelve archeological commissions, seventy-eight agricultural associations, and seven hundred commercial societies, to promote the application of science to industry. These associations generally feel the impulse described by Lamartine in his address to his colleagues of the Academy of Literature and Science at Maçon: "You have felt, gentlemen, that knowledge is yours only on the condition that you diffuse it; and to raise the low, is to elevate the high. Around you all is progressing. Will you stand alone? Will you suffer yourselves to be overtaken? No; men of leisure or rather workmen—workmen of thought and science, it is for us to be the first to participate in the movement. In a state of civilization where intelligence gives power, rank is maintained only by the maintenance of moral superiority; when the intellectual order is deranged, disorder is not far off."

There were in 1850, one hundred and sixty-six towns in France, in which there were public libraries, containing 5,510,295 volumes; of these libraries, one hundred and nine contained over 10,000 volumes each.

The following summary of the grants comprised in the French Budget of 1847, as voted by the chambers, exhibits the comprehensive character of the aid extended by the government to educational, literary, scientific, and artistic purposes.

A.—*In the Department of Public Instruction.*	
I. Central Administration and to aid institutions of special instruction, such as schools for idiots, the blind deaf mutes, &c., ...	$112,000
II. University of France—including schools of primary, secondary, and superior education, ...	2,800,000
III. Literature and science—including libraries in Paris and the provinces, museums of natural history, the institute of France, &c., ...	600,000
B.—*In the Department of the Interior.*	
Schools of design, and the fine arts, ...	450,000
C.—*In the Department of Public Works.*	
Buildings connected with science, and the arts, . . .	100,000
	$4,062,000

The above sum is exclusive of special grants in aid of schools of agriculture, commerce, and manufactures, or of charitable institutions in which agricultural and mechanical instruction was given, or of expenditures for the galleries of the Louvre, Luxembourg, and Versailles; amounting to at least another million.

The following survey of the Industrial Instruction of France is abridged from an article in the *Revue des deux mondes*, for 1851, by A. Amphori, entitled, "The intellectual movement among the working classes."

In the scheme of institutions devoted to this special instruction, the first rank belong to the conservatory of arts and trades at Paris. This great establishment performs a twofold duty; it collects models, designs or descriptions of machines, instruments, apparatus, and mechanical tools, and gives public lessons upon the mathematical and physical sciences as applied in the arts. The first idea of the conservatory was conceived in the reign of Louis XVI., by a famous mechanic, who seemed to have even drawn from the very sources of life, wherewith to gift his marvellous mechanisms. The idea of Vaucanson, legislated upon in the year III. of (1794,) the revolutionary era, was not realized until the year VI. (1796.) Since that time, the conservatory has followed the developments of the national industry;

and its methods of action have been increased in number, with reference to its double purpose. It now includes four departments; the collections of machines, &c., a technological library, a department for higher instruction, and a small practical elementary school.*

The galleries filled with precious material treasures, form what may be called the archives of the industrial arts. These collections are annually increased, and now fill thirteen galleries.

The department of higher instruction was established about the commencement of the restoration. Up to 1817, there had been at the conservatory only a designer and three demonstrators, who gave advice and explanations to those who come to ask for them. These accommodations, however, remained nearly useless to the public. The regular courses were of more value, as also were those commenced in 1819, upon geometry applied to the arts, industrial chemistry, and industrial economy. Besides these three chairs, others were erected, under the government of July, of industrial mechanics, descriptive geometry, chemistry applied to the arts, industrial legislation, agriculture, and the ceramic arts. The situation of the institution in the midst of a populous neighborhood, furnishes to its lectures an auditory composed chiefly of working men. It is the merit of these lectures, that they are clear, simple, intelligible to all. and susceptible of immediate practical application. Theory is explained in close contact with practice. The workmen, eager to learn, crowd to these lessons; they hasten thither from the workshops every evening. A most favorable indication is given by the admirable order which reigns throughout this audience in blouses, bestowed in an immense amphitheater, and often overcrowded. Every one is silent and attentive. There is no instance there of the indecorums so frequent in institutions giving a higher order of instruction.

The library of the conservatory of arts and trades is appropriated to the members of the institution. It is distinguished by a fine collection of French and foreign scientific works; and contains much which may afford valuable information to practical men in the various branches of industrial art. The lower school, founded under the empire, may be regarded as a primary school of explained labor, (industrie raisonnée.) Its three courses, of descriptive and elementary geometry, of mechanical and architectural design, and of industrial design, are attended by from a hundred and fifty to two hundred pupils.

The conservatory of arts and trades, as at present constituted, contains very valuable elements of industrial instruction. Workmen, foremen, chiefs of establishments, children of mechanics and laborers, come thither to obtain an instruction which shall enlighten their career of labor.

The three schools of arts and trades, at Châlons, Angers, and Aix, dependent, like the conservatory, directly upon the State, are devoted more especially to practical instruction. The eldest, that at Châlons, established for a little while at Compiègne, was erected by a decree of the consular government of the year XI. The second, created in 1811, was placed by the imperial government at Beaupréau, in the middle of La Vendée, to become a new center of activity for that ignorant neighborhood. The third dates only from 1843. The schools of arts and trades are intended to train skillful workmen. Each of them is divided into four workshops; the blacksmiths', the foundry, the finishers', and the carpenters'. To the three establishments of Châlons, Angers, and Aix, are appropriated for 1851, $200,200; but deduct from this the sums received by paying scholars, and from the sale of articles manufactured, and the net expense to the treasury amounts only to about $120,000.

Official estimates show that more than half the pupils leaving go into business, as finishers, founders, blacksmiths, machinists, or carpenters. And numbers of the others are employed in the department of roads and bridges, as overseers or conductors; draftsmen in machine shops, or as architects. The schools of arts and bridges also contribute a remarkably large proportion of the machinists, &c., for the public steamers. Thus, within the last seven years, have been employed more than a hundred graduates of these schools, as foremen or firemen. As to the proportions of theory and practice in the instruction, it is enough to say that the pupils pass seven hours and a half daily in the workshops, and only five hours and a half daily in classes and in the apartments for design. The professors are rigorously obliged, in their lessons, to take the most usual point of view; that from which the pupil can best see how to use the knowledge he acquires. Since the vote was substituted for ministerial selection of professors, two years since, the courses of instruction have been so arranged as to drop out those theoretical gentlemen who are unable to do what they teach.

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* The appropriation to the conservatory in 1851, was $30,000; $18,168 for salaries, and the remainder for other purposes.

The principal advantage of these schools is not, in our opinion, the direct influence which they exert upon the national industry. The two hundred and fifty pupils or thereabout who leave them every year, are scarcely the thousandth part of the workmen who grow up in France during the same time; but the schools show a style of instruction which serves as a model for comparison. The pupils carry into private workshops theoretical knowledge which they could not acquire there, and which is most useful in the explanation of practical labor. Although yet imperfect workmen, they improve more rapidly than the others, and sooner become excellent foremen. Although we know that among some foreign nations, habits supply the place of institutions, among us, these schools will stimulate a litule our untoward habits. They have another destination, of higher importance; they may become seminaries of professors for the industrial instruction which the country waits to see organized, and for which we are now endeavoring to prepare a way. Once improved by the practical training of the private workshops and manufactories, the best pupils of these schools will become most useful in the development of this special instruction; which needs a body of instructors adapted to its peculiar needs.

An institution established at Paris, the central school of arts and manufactures, also helps the accomplishment of this same work. The similar nature of its instructions alone justifies the assistance granted it by government, which confers upon it a sort of public character.* During an existence of twenty years, the central school has fully justified the expectations of its founders, it is devoted to the education of civil engineers, directors of machine-shops, and chiefs of manufactories. Besides the four principal courses studied, the mechanic arts, the chemical arts, metullurgy and architecture, it instructs its pupils in all the pursuits of industrial labor. Since chemistry has left laboratories to enter workshops and to perfect there the results of manufacturing processes; since the physical world has been searched for the means of employing heat and steam, which have become such powerful agents of production, industry has ceased to be abandoned to empiricism. Every manufacture has asked from science methods quicker, surer, and more economical. The central school satisfies this demand. By physical and chemical study, it prepares pupils expressly for the direction of industrial labor, just as the polytechnic school, by the study of mathematical science, becomes a seminary for the department of public works, and for some other special professions.

Under these institutions, which have a general character, may be ranked those institutions which we will term local. These may be divided, in respect to their destination, into two great classes; one, consisting of those whose design is to instruct in the applications of some one science to the industrial arts; and the other, of those which confine their instruction to the practice of an art or trade; or to the collaterial knowledge necessary to exercise it. To estimate the actual influence of both, they must be considered in the place where they exist.

In the northern section, where manfacturing industry reigns supreme, we see only the arts of design as applied to arts and trades, gratuitously taught. The schools of design established in most of the important towns, are generally of recent creation. The oldest date from the restoration or from the empire, except that three or four, have an earlier origin. For instance, the school of Arras, where some instruction is given, which relates partly to industrial occupations, was founded by the states-general of Artois, in 1775; that of St. Omer in 1780, and that of Calais in 1787. These institutions are every where much valued among the working classes. Some of them contain classes of as many as a hundred and fifty pupils. Some of them are particularly for children, but most for adults.

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* The State allows the central school an annual sum of $6,000, which is distributed to candidates (for prizes) by a vote.

Architectural design and practical geometry, as applied to cutting stone, wood, &c., are often among the studies. In all that populous district which extends from the Belgian frontier to the western extremity of Normandy, and contains such manufacturing metropolises as Rouen and Lille, there are only two small institutions which really have the character of industrial schools. One is at Dieppe; it is a school for lace-making and open-stitch for young girls. It was founded during the restoration, and increased during the government of July. It receives about three hundred pupils, and while giving them a primary school course of instruction, it also instructs them in an occupation. It has exercised a favorable influence upon the lace manufacture; there has been organized in connection with it, a boarding department, where some poor girls are supported gratuitously, and educated to become skillful work-women and assistant teachers. The other institutions situated at Mesnières, in the *arrondissement* of Rouen, receives about sixty orphan boys, and trains them for business in workshops appropriate for different trades. Some local societies, as the society of workmen at St. Quentin, &c., endeavor to instruct the laboring classes in some occupations.

In our eastern departments, the domain of industrial instruction is less confined. There are there some schools, some technic institutions, for the working classes. The schools of design are more numerous than in the north, and are more decidedly directed towards manufactures. The manufacturers of Switzerland, Germany, and England, have more than once had upon their fabrics the marks of the designers, engravers, and colorists, trained in the gratuitous schools of the Haut-Rhin. Some schools of design of rather wider scope, do great service to industry. Among these may be especially mentioned the school of Saint-Etiènne, where are intructed all the designers employed in the neighboring manufactories, and in particular by the ribbon-makers, who are so very jealous about the good taste of these articles of ornament. Besides instruction in design, there are given from time to time public courses of instruction, established and supported by the towns, and particularly elementary courses in chemistry, in mechanics, physics and mathematics, such as may furnish the workingmen with an intelligent understanding of their profession. Among the cities which enjoy to some extent instruction of this sort, may be mentioned Metz, Mulhouse, Colmar, Bar-le-Duc, Besançon, Rheims, Nancy, Dijon, Rive-de-Gièr, Langres, &c. These institutions are sometimes the results of individual effort; thus, at Besançon, a private citizen founded in 1829 a public and free course of study upon mathematics as connected with the arts. At Bar-le-Duc, industrial courses were established by an association of subscribers, and were taken charge of by the commune. Local societies, among which the industrial society at Mulhouse is first in influence and resources, have increased the local activity, and give the initiative to the population in general. In Sémur, a small town of the Côte-d'-Or, a private society. Some manufacturers have imitated this example; for instance, in the great establishment of Guebwiller (Haut-Rhin) gratuitous lessons are given to the operatives in linear design, geometry, and machinery.

There are also in the east of France, several institutions devoted more exclusively to special purposes. The most important, whose regulations are worthy of most attention, are at Lyons, Strasbourg, Nancy, and Saint-Etiènne. Lyons stands first, both for population and manufacturing wealth. Besides the Lamartine school, in which are given instructions in mechanics, physics, chemistry, and design, and also a course in the manufacture of cloth, a number of private institutions give practical instruction in loom-weaving, and the theory of the decomposition of cloth, (décomposition des étoffes;) they instruct also how to set up looms after any required pattern. Instruction is also given in making patterns, in designing for woven fabrics, and in keeping accounts for workshops. These lessons, as will be observed, go to the heart of the industry of Lyons. It is only to be wished that it were more liberally dispensed; and that the city would make it gratuitous. Lyons has also schools for teaching designing of figures, stone-cutting, and several schools of design for journeymen carpenters; but it is to be regretted that payment is necessary for admission to them. Strasbourg has a well organized school of design, maintained by the commune. The practical instruction given there, besides elementary theoretic instruction in mathematical and physical science, includes iron-work at forge and vice, turning, carpentry, lithography, and chemical manipulations. In selecting the workshop for a pupil, reference is had to his tastes and aptitudes. At Nancy there has been for several years established a "house for apprentices" on an entirely new plan. The results have been considered deserving of encouragement by the council-general of the department of the Meurthe. The apprentices form a family, and call one another brother. Infractions of rules are determined upon by a tribunal composed of all those apprentices who have obtained a certain number of good marks. A good mark is given by vote of all the pupils. The penalties consist of a system of reparations founded upon the nature of each fault. Thus, one who breaks silence when silence is ordered, is condemned to keep silence until permitted to break it. If two apprentices quarrel, they must embrace and become companions at play for a set time. The pupils of this establishment labor in the workshops established in it, and attend the communal schools to receive primary instruction. At Saint-Etienne, a school of mines is intended to furnish conductors of mines, and directors of explorations and mineralogical workshops. As this instruction is gratuitous, workmen may attend the school to be taught mining.

In the department of Doubs, a practical school of horology was founded in 1836, at Morteau, for the purpose of preserving and increasing the beautiful employment which is important to the labor of that section. In the leisure of winter, always so long among the mountains, the farmers, shut in so much by the snow, have no other means of occupying their time. The town of Besançon, the department, even the supreme government, had encouraged the establishment of the school at Morteau, which seemed to promise great success; but different causes having diminished the demand for the clocks from Doubs, the school, after having already done some good, was forced to be closed. Similar institutions have been unable to support themselves at Dijon and Maçon. The departments and towns ought to have afforded them a more liberal support. .The same may be said of a school of another species, for mounting looms, established at Rheims by a local society, in which skillful mounters and weavers had already been trained, but which perished for lack of funds.

In this same region, at one of the most ignorant points of the department of the Meurthe, a project is being put in execution to which we wish the best success. It is intended to establish a special school for a branch of industry to which, though humble, a considerable population is confined. The inhabitants of the six communes of the ancient county of Dabo, at the foot of the Vosges, which was united with France only in 1801, have no other means of gaining a living than their forest-rights in the public forests, and the execution of carefully carved wood-work. Their hereditary industry, remaining absolutely stationary, has become surpassed by other products of the same kind, and commerce gradually refuses them. The projected school is designed to instruct these unskillful turners in methods of labor more suited to existing tastes and demands. Instruction will be given in making playthings and domestic utensils, such as those made in Switzerland and in the Black Forest. In order to have some chances of success, it will be necessary to instruct the young, and not the adult workmen, whose traditional habits it would be difficult to alter. These latter, having been exclusively employed in doing coarse work, would find it very difficult to acquire delicacy of hand. With this proviso, the plan of the founders of this school appears excellent; when it has succeeded, it will be another good example of what our eastern departments can offer in the way of industrial instruction.

The southern section of France is not so favored in this respect; it presents a similar aspect to the northern. Schools of linear design of trade, architecture or decoration, existing at Marseilles, Avignon, Montauban, Digne, Aude, Grenoble, Tarbes, Grasse, &c., a few courses of instruction in three or four towns in the elements of chemistry, of physics, of mechanics, of geometry, are almost the only institutions for industrial instruction. The town of Nismes alone is better supplied; perhaps there is not in all France another city where special instruction is given on so extended a scale. A course of design for manufactures embraces instruction in damasked and in stamped flowers. Another course of geometrical design completes the knowledge which the children have received in the elementary schools. The instruction in chemistry comprehends lessons in dyeing, an important branch of local industry. Admission to all the classes is free. A school of weaving, dating from 1836, is liberally opened for theoretic and practical instruction in the manufacture of cloths. The theory is of the processes employed both in brocaded and in plain stuffs; the practice consists in the actual weaving of the cloths in the loom. The town furnishes the tools, machines, and raw material, necessary for the work. By explaining the art of weaving in two aspects, this school has had an excellent influence upon the manufactures of Nismes. It was only necessary to endeavor to gather into it as many foremen and workmen as possible. In this same department, of the Gard, at Alais, has been established a school of master-miners. The instruction has not so high a character or purpose as that at Saint-Etienne, at least in that part of the course designed for directors of machine-shops. The practical exercises consist in drawing plans both of the surface of the ground and of the mines, and in mining in the mines of pit-coal about Alais. The pupils also practice blacksmithing, wagon-making, and carpentry. Admission is not free, and scarcely any pupils are expected except those maintained by some department, or by some of the coal companies.

In our western departments the two large cities of Bordeaux and Nantes are the only ones which have paid much attention to special instruction. In the capital of ancient Guyenne, in 1834 and 1835, the municipal council founded public and gratuitous courses of instruction in industrial chemistry, mathematics and mechanics, as applied to arts and trades. The chamber of commerce also, a rich and active body, established in 1843 a course of chemistry and natural history. A private society called the philomathic society, whose assistance has often been valuable to the laboring population of Bordeaux, has for six years defrayed the expense of special instruction; the practical part of which consists in linear design and instruction about the steam-engine. At Nantes, besides that the town maintains a free school of design, founded in 1789, there is a private society known as the industrial society, whose efforts for young workmen are now appreciated throughout France, which is at the head of the industrial training of the masses. It receives from the commune, the department, and the State, assistance which is increased by private subscriptions. The workmen are counted by hundreds, whose first steps it has guided in the rude career of labor. The object of this society is two-fold; to give its pupils instruction carefully adapted to their condition, and to arrange for their apprenticeship in different trades.

La Rochelle and Brest have also made some efforts to introduce industrial education in the west of France. At La Rochelle, was established in 1844 a theoretic course in ship-building; at Brest, a society called the society of emulation endeavors to instruct in linear design, in drawing plans, &c. In this part of France, all children, not merely of those of easy circumstances, but of all who are not altogether too poor, attend, without exception, the classical schools. They are often interrupted in their studies, by the inability of their parents to bear their prolonged expenses, and rarely succeed in reducing to practice, even at a late period, the imperfect education they receive. Families unable to send their sons to the high school, content themselves with the ordinary instruction. The idea of special instruction is scarcely a germ in this soil, which seems ungenial to it. Nowhere is the word "professional" applied to instruction in a narrower or falser sense.

The center of France, excepting the department of the Seine, whose establishments deserve a distinct notice, is scarcely less ill supplied than the west. Most of the departments are destitute of graded (sérieux) establishments also. Schools of linear design, or of design more or less applicable to industry, exist only at great distances. There are, however, a few institutions in which some practical instruction is given. For instance, the prytanæum of Menars, established in 1832 in the department of the Loire and Cher, and recently reopened after having been some time shut, is devoted to industrial studies. The plan of the institution is similar to that of our schools of arts and trades, but unfortunately has not as great resources at command. The city of Tours has established a course in physics and chemistry, but it has not been organized upon a sufficiently wide basis to attract many auditors. At Limoges, the municipal council and the agricultural society, by uniting their efforts, have done much good by means of public and free lessons, in geometry, mechanics, design, modeling, and stereotomy. In the Haute-Loire, Le Puy received the gift of a free industrial school from private subscriptions, the town paying its annual expenses. This institution, though less complete than that of Strasbourg, is constructed upon the same model, and accommodates a hundred children of workmen. There are some special courses at Le Puy also; but the practical applications of science are not brought out there. In the department of the Corrèze, though small and unkindly treated by nature, we see with pleasure, at Tulle, a free school of mechanical geometry. Linear design is applied there to the drawing of figures and of machines, to stone cutting, carpentry, and architecture.

At the other extremity of the central section, in the department of the Seine, whose riches and activity contrast singularly with the nakedness and simplicity of the country we are leaving, have been united most of the means of industrial instruction which are scattered here and there over the surface of France. Paris, nevertheless, contains nothing comparable with the school of weaving at Nismes, with the private institutions for teaching weaving at Lyons, with the national schools of arts and trades at Châlons, Angers, and Aix. We seek there in vain for an organized system of practical instruction, provided with all resources necessary to meet the public demand. All the establishments of this class in Paris, except the national conservatory of arts and trades, may be classed in two divisions; one appropriated to those in easy circumstances, or who can pay a monthly fee, the other gratuitous, and therefore accessible to the working population. In the former class are the Chaptal municipal college and the Turgot school, in both of which there is a department of industrial teaching; several schools preparatory to the school of arts and trades; schools of architecture, horology, &c. From our present point of view, the latter class calls for our especial attention. The number of public establishments included in it is inconsiderable. Besides the small school of the conservatory, there are hardly any other than free classes in industrial design. Design for woven stuffs does not occupy so prominent a place as it ought; the artistic element of design is preponderant, which will not be surprising when it is known that by a singularity of which our administration affords more than one example, these schools are altogether separate from the department of commerce, and under the direction of that of the fine arts.

In the vast field for industrial instruction among the working classes, the principal burden has fallen upon private institutions established by charity or by economic foresight. In the immense gulf of the capital, the action of these establishments does not appear to the indifferent, or to those immersed in business; but though silent and almost unknown, they are a valuable help to the unfortunate and to the helpless, and very profitable to the community. The institution for apprentices in the city of Paris, under the direction of M. Armand de Melun, trains up to labor, from the pavements of the city and from garrets and misery, a crowd of children who would otherwise have hastened to populate the prisons. While their instructors train their minds by primary instruction, and seek to inspire right sentiments into their hearts, they are gradually prepared for the actual life which awaits them. Another institution, that of Saint-Nicolas, receives several hundred pupils in two establishments, one at Paris and the other at Issy. Its judicious directors mingle a proper amount of elementary instruction with manual labor. Unfortunately the limited resources of this establishment do not permit it to furnish a very great variety of instruction. Other similar institutions are entering the same course. The work-rooms for girls are actual industrial schools for the most feeble and exposed portion of the laboring population, and that needing most care. There are also in Paris small school for apprentices, established almost entirely by the contributions of foremen for poor orphans. Such enterprises are worthy of judicious encouragement by the municipal council.

Other public and gratuitous courses of study, founded by private societies, with different designs and by different means, are assisting to disseminate technical instruction among the workmen. When a man has some property, and is thus in a way to fill a useful place in society and to gain his own living, instruction of this kind, carefully adapted to his requirements, dealing with fact rather than with theory, simple, and appealing to the good sense of the masses, is likely to produce excellent moral effects. I do not say that all these qualifications actually exist; some additions and retrenchments are necessary. The philosophic sentiment of the great task of industrial improvement for the masses is not clearly brought out; and the conditions of true practical instruction are often not fulfilled. Yet many honorable individual efforts have been made in this direction. They have produced real good, and merit effective encouragement from the Parisian municipal authority.

V. GALLERY TRAINING LESSONS,

ORALLY CONDUCTED IN NATURAL SCIENCE AND COMMON THINGS.*

BY DAVID STOW.

Oral training lessons, in natural science and the arts, are found to be not merely a highly intellectual exercise, but are valuable to persons in every rank of society, whether master, servant, or workman. While they are particularly valuable to persons in the humbler walks of life, in fitting them for manual and other labor, they are also important as the foundation of a more extended knowledge of science, to those whose circumstances may enable them to prosecute their researches still further. To the former, these school exercises may be nearly all the theoretical knowledge on such subjects they can ever receive. To the latter, a thoroughly analyzed or *pictured out* training lesson, day by day, will be found an elementary exercise greatly superior to the ordinary mode of merely reading lessons or lectures, even when accompanied by explanation.

The teaching of science by gallery lessons, and conducted orally, without book, is a new and additional branch in popular education, and that it ought to form a distinct feature in schools, even for the children of the poor and working classes, will appear, when we consider the importance of servants, (male and female,) workmen, and mechanics, having a correct idea of things and of scientific terms. The workman, in consequence, would know better the meaning of relative terms, even in the drudgery of manual labor, and he might be left to execute much by a simple order scientifically expressed, which he can not now do without very close watching and superintendence; and although the mechanic must have acquired a practical knowledge of his particular profession, yet early school training in science and scientific terms would have expanded and exercised the mind of many a man, humble in rank, but of powerful intellect, so as to have produced many more James Watts, Arkrights, and Henry Bells, than we now have, whose genius and discoveries might have enriched mankind, and added to the domestic and social comfort of all. How difficult is it to get a workman out of a beaten track, or, if he be a genius, to fix him in any track at all! These considerations induced me, at the earliest establishment of this system, to introduce, as the first exercise each afternoon in our model practicing school, oral training lessons on science *without book.*

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* Stow's "*Training System of Education.*" Eleventh Edition. Chapter xxviii.

It is evident, that although some points of science, from observation, reading and conversation, do force themselves upon the young mind, and may be made available when a person attends a course of public lectures in after-life, yet the fact of his knowledge having been gathered up at random, without arrangement or system, leaves him very much in the dark as to the basis on which all, or any science rests.

Had the sons of tradesmen and workmen, as well as professional men, acquired in school a clear outline of the various natural sciences—the question is, should such a sum require to have been expended on our new Houses of Parliament in regard to the proper arrangements of sound (acoustics) and healthful ventilation? also, as is now required for sanitary improvements in our rivers, and in our cities, and smaller towns throughout the kingdom? What the more learned superintendents may have overlooked, might have been suggested, no doubt, by some one or other of the intelligent humble workmen.

Visitors sometimes say, "What have the children of the poor to do with science? let them learn to read their Bibles, and repeat their Catechism; that's the education suitable for the poor." Science, however, is valuable alike to the mechanic and the man of business, in promoting the arts of life so indispensable to the wealth and comfort of all ranks of society. If the bold and clear outlines of science be given to all ranks, each may maintain his proper place in the scale of its ascension. The poor man, if he chooses, may advance beyond the limited period of his elementary school education, and the man of leisure and scientific research may rise as high as he pleases; whilst the genius, of whatever grade, acquires enough to enable him to prosecute his studies, and take his just place in society. But the trainer rises a little higher in his oral training lessons, and uses scientific terms, expressive of scientific principles, such as are used by lecturers on natural philosophy, in consequence of which, it is still urged by some, WHY TEACH SCIENCE to children in an elementary school? What can they understand of latent heat, the radii of a circle, centrifugal and centripetal forces, gravitation, electric fluid, and innumerable other more complex terms? Now we have to say, that all such terms may be simplified, and when reduced to simple terms, they can be understood by children of a few years old. Having these outlines clearly analyzed *by familiar illustrations,* so as to communicate the idea in the first instance, they can then be made to understand the most complex terms, expressive of the most complex movements and conditions. For example, the motion of a child round the circular swinging-pole in the play-ground, may illustrate, in some measure, how the moon keeps in its orbit round the earth, and the latter, or any other planet, round the sun; in other words, what is meant by the centrifugal and centripetal forces. The proper course of education in science has too generally been reversed; and the reason why so many adults stop short in their progress, and can not educate themselves (for education ought only to close with life,) is, that they have committed to memory technical terms, which, *not having been pictured out* and illustrated, are not understood; and, also, that the minute points of science have been given before the great outlines were drawn.

The philosophical terms which a public lecturer finds it necessary to use, are seldom thoroughly understood by his audience; they have not been explained, far less pictured out to the mind's eye. They do not therefore *see* the bearing of each point of the premises laid down, or the conclusions at which the lecturer arrives, and at the close are found oftentimes to have acquired no distinct impression of the actual lesson, which otherwise might have been received. They may applaud the lecturer as being a very *clever man.* "It was an excellent lecture!" "What beautiful experiments he performed?" "How remarkably bright he made the gas to burn, and what an explosion it produced!" But the lecture itself has not been comprehended. This is the every-day experience of the young and the old in attending public lectures on natural science. It would have been otherwise after a course of early school training.

The lessons during the first stage, or the outlines, at whatever age the child commences his course, ought to be exceedingly simple, and should comprehend a number of the more obvious things in nature and in art, which every child ought to know in their great outlines, before he is perplexed with minute points, or the use of technical terms; a knowledge of which he gradually acquires as he advances from stage to stage.

As a child, I wish to know what wheaten bread and oaten bread are; the distinction in quality, and how they are made; how butter and cheese are made; what salt is; how wine is made, and of what composed; what brown and loaf sugars are; the nature of tea and coffee, with the places where they are produced, and how they are brought to the condition in which they are found when used at home at the fireside; the distinction between wool, cotton, flax, and silk, both how they are produced, and why more or less warm.

The child ought to be made acquainted with articles of furniture. These are continually presented to his notice, and they afford the means of exercising his powers of observation, and training him to think. Their nature and relative qualities ought to be made familiar to him.

The natural history of the more common animals, domestic and foreign, is also an object of interest and a means of enlargement to the young mind, particularly when united with a short history, not merely of the habits of the animals themselves, but of the countries and inhabitants in and among which Providence has placed them, and the peculiar adaptation of each to its own particular circumstances, all proving the wisdom of their great Creator. As a child, I wish to know why the swallow is not seen during winter: why the hen has open feet, and the duck webbed; with other more minute points of the formation of animals; why the butterfly is seen in the summer only; from what origin it has sprung. What are all these? the child naturally inquires, and whence do the wings of the latter derive their pearly whiteness? Of what use rats and mice are, seeing they are so troublesome in our dwellings, and why and when they may be killed, without our being chargeable with cruelty; how the foot of the reindeer is suited to the frozen regions of Lapland, that of the horse to our own, and the camel's to the sandy deserts of Arabia. From each and all of these training lessons, the children may learn something of the power, and wisdom, and goodness of God to all His creatures; and such lessons should uniformly be drawn from the children by every trainer during the daily lessons.

The child sees himself surrounded on every side by men of trade and handicraft, and he wishes and ought to know not merely the qualities of things and the materials in use, but how they are molded, or joined, or mixed, or decomposed, so as to render them serviceable. He sees the smith form a nail or a horseshoe; why does he heat the iron in a furnace before laying it on the anvil and striking it with the hammer? The uses of the pulley, the screw, and the lever, ought to be pictured out to him by analogy and familiar illustrations. The child sees paper; why not woven as a piece of cloth, and why more or less impervious to moisture?

The child breathes air, drinks water, sees steam, dew, hail, and snow. What are all these? the child naturally inquires; and why is the last *white*, and when melted turns into water? What are thunder and lightning, and are they of any use? The sun to him appears always round, not so the moon—why so? The principal parts of his own body, and those of other animals, with their relative functions, ought to be known; the qualities and names of the more common minerals, and the great outlines of botany, causes of the tides, etc., etc. Such oral training lessons should be commenced in their outlines in the initiatory school, and carried forward more minutely in the juvenile and senior departments.

Much of the bewilderment felt by men of all degrees of acquirement rests in the fact, that scientific terms have not been analyzed or or pictured out by *familiar illustrations* as a first step in their early education. Complex subjects, and complex terms, which ought to have been the last, have generally been made the first stage; consequently blindfoldedness, to a considerable extent continues, these first and natural steps not having been traced. The acquirement of these primary steps, therefore, is an ordeal to which every student who practically studies in the seminary is subjected, before he can communicate what he knows to the children in the model or practicing schools.

In the industrial department, there are many important points with which the girls ought particularly to be made acquainted, and which may be carried into domestic and social life; such as, the scientific reasons why a room is better aired by opening the top of a window than the bottom—how to sweep a floor without "watering," and without raising the dust—the effect of making tea with water just brought to the boiling point, and water which has boiled for some time—how to make or mend a fire, so as to save fuel, and whether the top or bottom of the fire ought to be stirred, in rendering it what is termed either a good or a lasting fire—the philosophy of combustion, and whether smoke ought to exist at all, or to what extent, and how it may be cured or prevented—the scientific and practical effect of toasting bread, and laying one slice above another—and the effects, practically and scientifically, of fire on woolen, cotton, linen, and silken cloths. These, in addition to those previously mentioned, and a number of other practical matters, may be rendered highly useful to females in after-life.

Children, of both sexes, should be exercised daily on some point of science or the arts, particularly in relation to ordinary life and common things. Whatever is done should be well done. Analyze one point clearly, rather than a dozen points imperfectly. Variety does not dissipate the mind, or render knowledge superficial; it is only so when the mere surface is presented, without a proper analysis and *picturing out*. The child is fatigued and disgusted when kept too long on one subject, or course of subjects, whereas each power of the mind is strengthened by frequent and varied exercise. The natural process on entering a garden, or green-house, for example, is first to look at every thing within its four corners; but the plan generally adopted by the lecturer is to spend, as it were, a week at the door of entrance, analyzing the first few plants met with. Let the mind see the whole outlines of each department it enters upon in the first instance, and then with interest and intelligence it will patiently investigate each step in its progress.

When objects are within our reach, we make use of them in conducting the lesson as a sort of text, or starting-point; but whether within reach or not, our principle is to picture out the whole lesson, and every point of the *subject-matter* of which it is composed. Facts of which the pupils prove themselves ignorant are, of course, stated by the master—the lesson is then drawn, and given at the time by the children themselves in their own language. Their ability to do so, is the test whether the subject has been simply and properly pictured out—for if so, they must understand what they mentally see—keeping in view that we do not know a thing until we *see it* with our mental eye. For example, if separate lessons have been previously given upon the properties of heat, and water, and steam, and air, and the condensing influence of cold, and the screw, and the pulley, and the inclined plane, and the lever and the centrifugal force; and if all these and other forces be pictured out, as combined in one machine, the children will readily understand what a steam-engine is, in their minds, and tell the trainer the effect of its power upon the shaft that may move spinning machinery, raise water, or propel a steam-vessel or railway train.

These oral gallery lessons are conducted daily on precisely the same mode with Bible training lessons. Whilst the Bible lessons are uniformly read from the Bible itself, the secular oral gallery training lessons are taken from such subjects as are given in a subsequent chapter. The Bible lesson ought to be the first in the morning, and the oral secular gallery lesson the first in the afternoon, although only twenty minutes or half-an-hour be occupied in conducting it.

There are *very few* good text-books on science and secular subjects, which can be read by the children before and at the moment the daily secular lesson is given, both because they are generally too lengthy or incomplete, and because nine-tenths of the points to which our oral training lessons refer are less abstract, and of more practical advantage, than the subjects to which these treatises refer, and must of course be given by the master. Oral secular training lessons, as a distinct branch, therefore, are conducted by the trainer *without book.*

This, however, does not prevent the master elucidating any point he chooses to fix upon during the ordinary reading lessons of a school book.

By some strangers we are complained of as being too simple, by others as being too lofty, in the subject-matter of our lessons, and that the terms used while analyzing them are too simple, or, on the other hand, too complex; they would thus place us "between two fires." Our desire, however, is, that the pupils *see* every step of the progress of picturing out, whatever the subject may be. Our practical students at first uniformly complain of the difficulty of simplifying every subject; but, eventually, they become fully convinced, from experience, that ***simplicity is the last and highest attainment of a trainer of youth.***

PRACTICAL EXAMPLE I.

Early Stage[*]*—Initiatory Department.—The Camel.*

Now, children,[†] you see this picture (presenting the picture of a camel, if you have one, but if not, you must describe its comparative size with some animal they are acquainted with, noticing also the peculiar hunches upon its back.)

What is the name of this animal? *The Camel.* Camel is the name of...*this animal.*[‡] The camel, children, lives in hot countries, such as Arabia. Arabia is a very hot country in Asia, where there are hot sandy deserts, in which there are neither trees nor...*grass.* The camel has feet and legs, and...(pointing to the parts) *a head,* and...*a back,*—as every animal has. *What a lump on its back, master!* This is what is called a...*lump.* Do you remember the name I gave to that lump? I called it a hunch. A great...*hunch;*—that, then, is a...*hunch.* Tell me how many hunches it has got. *Two.* It has got...*two hunches on its back.* This one is on... Where is this one near? Supposing this boy were to walk on all fours, that is on his hands and...*feet,*—and a hunch were above this place. What do you call this place? *Shoulders.* The camel, then, has a hunch upon...*its shoulders,*—or close behind...*its shoulders,*—and another upon... What is this? *Tail.* Is this the tail? *Back, Sir.* It is upon...*its back,*—near...*the tail.*—but not...*upon the tail.*[§]

Now, then, children, I shall tell you something more[‖] about this wonderful animal. *It has got crooked hind legs, Sir.* Very right, my little girl; the camel has got very broad strong...*hind legs,*—which look as if they were...*crooked,*—

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[*] In every stage of the child's progress, *questions and ellipses* must be judiciously and naturally mixed. Three dots thus...mark the ellipses—Italics—the answers of the children.

[†] No lesson is proceeded with until the children are physically and intellectually drilled into order. (See Notes, Stage I., "A Stay," and "Man with the withered hand.") At the end of every point of the lesson, also, some slight physical movements are requisite, such as stretching out arms simultaneously twice or thrice, rising up and sitting down, etc., varied according to the age and condition of the feelings of the children. Some of these are absolutely requisite *before and during the progress* of every lesson, but one of the most powerful means for securing the attention are the trainer's actions and *variation in the tones of his voice.*

[‡] Inverting the sentence.

[§] The younger the children are, there must be more ellipses and fewer questions.

[‖] Some slight physical exercises may now be necessary.

and in the next lesson we have upon the camel, we shall say something about the use of what appears a crook in its...*hind legs*,—and you will be better able to understand the reason then than you would just now.* Let me tell you, that the camel has got on his body very fine hair of a light brown color, called... What would you call the hair that grows upon the camel? (No answer.) What would you call the hair that grows upon a cow? *Cow hair.* What would you call hair that grows upon the camel? *Camel hair.* This hair, children, is made into cloth, and makes very pretty...*jackets.* I have no doubt that cloth made from camel's...*hair*—would make a jacket, as this boy says, but it is made chiefly into cloaks or...*mantles.* The climate† is too hot for jackets, that is to say, the sun is too hot in the country where the camels...*live*—for the people to...*wear jackets.* People in hot countries generally prefer loose wide clothes, not clothes that fit tightly like...*a jacket.* Why? *Because they are cooler.* The body is kept cooler, or at least pleasanter, when the clothes are loose than when...*they are tight.* What part of the world are we speaking about? You will remember I told you at the beginning of the lesson. What was the name? *Arabia.* This girl is right; don't forget the name of the country where camels chiefly live...*Arabia.* Very well, the camel's hair is made into...*cloaks*—and *mantles.* Do you remember, in one of our Bible lessons, who was said to have worn a garment made of camel's hair? *John.* John the...*Baptist.*‡ Very well, children, you have said that the camel lives in... *Arabia*—that it has two...*hunches on its back*—one as large as you see, and the other...*small*—or...*smaller;* that its hair is of a...*light brown color*—and very...*fine.* And what do the people make of its hair? *Cloth*—cloth for...*mantles.*§

Look what a nice place that would be for a ride, children. That place is something like a... What is put as a seat on a horse's back? *A saddle.* What do you think that place is like between the two hunches? *A saddle, that would keep us from falling, Sir.* Very right, boy, the hunch behind would keep you from...*falling back*,—and this one near...*the shoulder*—would keep you from... *falling.* Where? *On its neck.* But perhaps you might fall by its sides. *The stirrups would keep me up.* O then, you are for stirrups, my boy! You would ride very safely on the camel's back, if you had...*stirrups*—between these two large...*lumps.* Lumps! *Hunches, Sir.*

Now, I must tell you something more about this wonderful animal, and then you will tell me what you think of it. The camel is a very tall animal, as high as six feet, that is, from the...*floor*—to a little above my...*head.* (The master pointing first to the floor and then to the top of his head.)‖ Supposing I wished to take a ride on such a high animal, how would I get on its back? *You might take a stool.* But suppose I could not get a stool, and were in the desert of Arabia? *I would jump.* Could you jump as high as yourself, think you?

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* We give the outline first. See *passim.* At the same time acknowledging one or other of the answers and observations of the children.

† A word they can scarcely as yet understand, but being expressed, the trainer must break it down.

‡ Of course the trainer remembers that this fact occurred in a Bible lesson, otherwise the question would not be put at this time.

§ The children, of course, make many mistakes, which must be corrected by training, not *telling;* but to exhibit which on paper would render the perusal intolerably tedious.

‖ Action suited to the words is important in training, as it is in all public speaking. The attention of the old as well as the young is arrested by it, and it even partially pictures out the subject.

Yes, Sir. Try it. *No, Sir, no.* Now, I'll tell you how it is done. The keepers of the camels *train* them when they are young to kneel...*down*—upon...*their knees.* By training, I mean they make the camels...*kneel down;* that is to say, when the keepers train the young camels to kneel, they make them...*do it.* When the camels are trained to...*kneel*—on the...*ground,* they...*do it.** The keeper whistles, or makes some particular...*sound,*—and the moment the camels hear the...*whistle*—they... What do they do? *They kneel.* And when they kneel, any man can...*jump on its back,*—and after a person is on its back, and the camel rises up... What might they do? *Take a ride.*

Now, then, the camel rides with a man, or any burden, on...*its back,*—just like... What animal do we use for riding in this country? *A horse.* But it is much stronger...*than a horse.* It can carry a greater weight, where? *On its back,*—than...*a horse.* How long do you think a horse could go without water to drink? *Don't know, Sir.* Do you think a horse could want water a whole day? *My father's cart horse drinks every morning and every night.* Not oftener than morning and evening? *Yes, Sir, at meal hours.* Your father's horse takes water, you say, several...*times a-day.* Well, let me tell you that the camel can travel through... What sort of places did we say it traveled through in Arabia? *Hot sands.* Dry, burning...*sands,*—burning with the...*heat of the sun,*—for a whole week together, without taking a drink. *Does it get no water, master?* I'll tell you about that just now, children. There are no wells, or rivers, or . *ponds,*—or water of any kind in these deserts, and God has so made the stomach of this... *animal,*—or rather God has given it two stomachs. You know the stomach is where...*we put our meat in.* And what else? Where do you put your drink in? *Our mouth.* And where does the water go after that? *Into the stomach.* Well, as the camel requires to carry heavy...*men* and *women,*—and what have men and women with them sometimes? *Things—goods.* The camel has goods and other...*things*—to carry besides men and women, which are a great burden, through the... Where? *The sandy deserts,*—sometimes for a whole week together, without coming to a place where they could get...*water,*—so God, out of his goodness, has provided them with a large... Where does an animal put the water it drinks? *Its stomach.* God has provided it with two...*stomachs,*—so large that it can take in as much water in one of its...*stomachs*—before it starts on the journey as serves it the...*whole time.* This boy's father's horse† requires water every...*day.* How often? *Several times a-day,*—and there is plenty of water in this...*town.* What would a horse do in the sandy deserts of Arabia, think you? *Die.* Die for...*want of water.* It would be so thirsty from want of water that...*it would die.* You say the horse would die there. Would the camel die? *No, Sir.* Why? *It has a great quantity of water.* Where? *In its inside,*—that is...*in its stomach,*—which serves it perhaps for seven or eight days, when it is crossing, that is, when it is walking through...*the deserts,*—and burning...*sands*

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* DOING is the principle of the Training System intellectually, as well as physically and morally.

† While he acknowledges the answers of all, from time to time, and thus stimulates all—the master, as a moral trainer, must take care not to be partial, and that while he acknowledges the answers of the forward and warm-tempered children (*who are always ready and willing to make a show-off in school,*) he as often notices and comments upon those offered by the more gentle and timid, whose answers are generally no less correct, but who require encouragement to express them, and the particular notice of whose answers, *in turn,* also acts as a check on the too great forwardness of the other parties. The practical exercise of this principle stimulates all alike, protecting and encouraging the timid, whether male or female, and regulating and molding, by degrees, the spirit of the forward.

of Arabia. The horse, such as we were speaking about, you say, would not do for...*Arabia*,—but the camel will do to ride across the...*sandy deserts of Arabia.*

We have a number of things to say about this wonderful animal, which I must tell you at next lesson, but I wish to speak about another thing at present. It is about its feet. The camel has very wonderful...*feet.* They are broad, large feet, and very soft and spongy, like a piece of... Mention any thing you know to be soft. *Mutton, bread, butter, beef, my cap, flesh, my hand, twopenny loaves, Sir.*[*] Enough children. One boy says[†] that the feet of the camel are as soft as his hand. Tell me why do you think God has made the feet of the camel soft. (No answer.) How has God made the horse's feet? Attend, children. What kind of ground does the horse walk upon? *Soft ground.* Is the ground always soft? Where does it walk when carrying a burden, or when a man rides it? *On the road.* And when in towns? *On the streets.*[‡] What would take place were the horse's feet as soft as the camel's? *They would be hurt.* Our roads are covered over with...*hard stones*—and a soft foot like the camel's would...*be hurt.* The horse's feet are...*hard*—and the farrier—that is the man who shoes horses—the farrier makes something hard for them. What does he make? *Shoes.* What sort of shoes? *Iron shoes.* You and I wear... *leather shoes.* The horse wears...*iron ones.* In walking upon sand, how do you find it under your feet? *Soft.* Were the horse to ride with a heavy burden on its back on the sands of Arabia, what would happen? *It would sink.* Its hoofs or feet would...*sink in the sand*—and then it would not...*get on*—its...*journey*, when walking on the...*soft sand.* And what would happen to its feet? Do you know what its hoofs are made of? *Hard.* True, they are hard, but many things are hard. This table is...*hard.*—*Bones, Sir.* Not bones, but almost as hard as...*a bone.*[§] If the hoofs or feet of a horse are hard and dry like a bone, what would happen them in the hot sandy deserts? *They would be birseled.* What do you mean by birseled? *Burnt.* Not quite burnt, but...*half-burnt.* Then, you think the horse would not do for the hot...*sands*—of...*Arabia*—but it does very well for...*this country.* What kind of feet did you say the camel has? *Soft.* Very spongy—and...*soft*—like a lady's...*hand*—not dry like the... *horse's feet*—but soft and full of moisture, like the palm of my...*hand.*[‖] What has the camel to walk upon, little girl? *Sand*—and therefore God has made its feet... How? *Soft.* Soft to walk over the fine...*sand*,—and full of sap like oil, that never dries up any more than my foot or...*hand.* Now, tell me, why are they full of sap? That they may be...*able to walk in the deserts*—a...*long time*—without their... What would happen to their feet if they were as dry as the horse's feet? *Dry up.* The camel's feet, then, do not...*dry up*,—although they should be walking through hot...*sand*—for many...*weeks.* Why are they large? What use have they for large feet? *Don't know.* If you wish to walk through deep snow, whether would you use stilts, as boys sometimes do when crossing a stream, or would you put on snow shoes, like the Laplanders? (Silent.) You will remember we were speaking about the snows of the north the other day. Whether do you think the stilts or the snow shoes would sink the farther? *The stilts.* The stilts would...*sink very deep*,—the snow boots do...*not sink*—they do not sink very...*much*—because they are... What size are they? *Large.* The snow shoes are...*large*—and...*broad.* How broad? I shall tell you—they are broader and longer than a man's...*boot.* Tell me why the feet of the camel are large? *That they might not sink*—in the...*deserts.* Horses have hard hoofs or...*feet*—which suit them to travel in...*this country*—or any...*country*—where their feet...*would not sink*—but...*not in the deserts of Arabia.* I must tell you that there are plenty of horses in Arabia, beautiful horses, for there is hard ground in Arabia as well as...*sandy ground*—but then Arabian horses won't do for the... What were we speaking of? *Sandy deserts*—where their feet would...*sink*—and where there is...*no water to drink.*

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[*] Too wide a question (in fact a guess;) the trainer consequently receives too many answers, and must concentrate their ideas upon one point. He seizes upon one of the answers as the nearest, and trains the children to the correct one he wishes to reach.

[†] The moment the master fixes upon any one answer, all are silent, to hear what is to be said upon it. This does not depend on its being right or wrong. They are satisfied that some answer is attended to.

[‡] During the next lesson, or in Stage II., the reindeer may be brought in as a comparison, but the horse, an animal with which they are *familiar*, is enough at present. In future lessons the comparison of the reindeer in the snows of Lapland, the horse at home, and the camel in the deserts of Arabia, and the adaptation of each to its peculiar circumstances, may then be pictured out, and from which a lesson may be drawn on the wisdom of the great Creator.

[§] It would not do at this early stage, when nearly every fact is new to the *children* to divert their attention from the direct course, by giving the analogy between the construction of the hoof of the horse, with other substances, such as horns, whalebones, etc. This should come under its own particular head, or secular gallery lesson on horns, whalebone, etc.

[‖] The trainer showing and pointing to the palm of his hand. The child in this way adds, *incidentally*, another word to its vocabulary, viz., *palm*, the idea and the word representing the object being combined.

But the camel's feet do not...*sink in the sand*—being...*soft and big.* And what does it do for water? *It carries it in its stomach.* In one...*of its stomachs.* And what does it do with the other. *It digests its food.* God, then, who made all things very...*good*, has made the camel to suit the...*sandy deserts.* Very well, children.[*]

Now, I fear you are getting tired. Let us have a little exercise. Heads up—shoulders...*back*[†]—chin...*in*—heels...*close*—toes...*out*—hands on...*lap.* Now, perfect silence.[‡]

REVISAL.—In case too much be occupied at one time, the following Revisal may commence some subsequent lesson on camel.

We shall have done immediately. Let me see if you remember what we have said. The camel is an animal... How high? *As high as you, Sir.* How many feet? *Six feet.* I am not quite six feet high, therefore it must be... *higher than you.* I forgot to tell you that the camel is about ten feet long, that is, as long as that...*desk.* Six feet...*high*, and about...*ten feet long.* It has two large...*lumps.* Remember the name I gave you...*hunches.* Where? *On its back*—which makes a...*nice saddle to ride on.* How many stomachs has it? *Two, Sir.* One of them is...*large.* For what purpose? *To keep water in it.* A curiously formed stomach, that contains as much...*water*—as serves it...*on its journey.* Where? *Across the sandy deserts of Arabia*—for unless it had a quantity of water...*in its stomach, it would die*—for want of water—or from... *thirst.* Why? *On account of the heat*—and dryness of...*the sandy deserts.* You also told me that the camel's hair was...*fine*—and what color? *Brown—a* light...*brown color,*—and that the people make it into...*cloth*—for...*mantles and cloaks.* And what did we say about its feet? What sort of feet has the camel? *Soft and spongy;* and what else? *Large.* Why soft? *To tread the sand.* And why are they broad? *That they may not sink in the sand*—when the camel has... *a large burden on its back.* The camels go in great numbers through the deserts, with men, women, and...*children*—on...*their backs*—and also a quantity of... *goods;* but we must speak about these things again. It is time now to get out to the play-ground for a little.

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[*] *Repetition* of the idea in different forms of expression is absolutely necessary during the first and second stages of training.

[†] When the children fill up the ellipses they naturally perform the action. Were the master simply to tell them what to do, he could not so readily secure the attention of all.

[‡] Rising up, and sitting down, simultaneously, not by a stamp of the foot, which is clumsy, but by following the motion of the master's hand, from the horizontal, slowly or quickly to the perpendicular, and again to the horizontal, which may be repeated. The eye being necessarily fixed on the trainer, secures the attention, and this, and every similar exercise, establishes the habit of obedience and order.

I am thinking, children, of the camel's feet. Whether is the foot of the horse or the camel the softer? *The camel.* The camel walks so gently on its soft feet, that were one to walk along this floor, you would scarcely hear...*it was walking.* It would scarcely disturb little Henry, here, who is beginning to...*sleep.* Henry is not...*sleeping*—but just a...*little sleepy;* he must, therefore, get out soon into the play-ground, else he will get...*fast asleep.** So you think the soft gentle walk of the immense camel, passing the gallery, would disturb a half-sleeping boy? *No, Sir.*

Now, children, prepare to march to the play-ground. We shall sing the song, "Now, since our lesson's o'er." March prettily—make little noise—do not scrape or beat the floor with your feet. Go on.

To many persons who are unacquainted with the Training System, this example may appear absurdly tedious. Slow, however, as the process is which we have exhibited, many points, even of the few that have been pictured out, are too abrupt. The whole, no doubt, might have been told the children by *explanation*, and embraced in half-a-dozen sentences; or by the question and answer system in a couple of pages; but mere external objects, however varied, or explanation by the master, never can secure an equal amount of understanding as does the principle of *picturing out* in words by familiar illustrations—questions and ellipses mixed, etc.

A trainer who can conduct the first stage or outlines properly, finds no difficulty whatever in conducting the subsequent stages—each succeeding exercise also, on any subject, finds the pupils more capable of bringing out the lesson, so that what would occupy a fresh trainer and fresh scholars one hour to picture out, so as to draw the lesson, will be eventually more easily done in twenty minutes.

PRACTICAL EXAMPLE II.

Stage I.—(Children, who may have been One or Two Years under Training.)

The Mole.

Tell me children, where the mole lives? *In the earth*—under†...*the ground.*

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* Long before the speech is ended, little Henry, of course, is quite lively. A pull, a push, a scold, or a touch with the rod, whatever effect such may have at the moment, is not so lasting as a general appeal to the understanding and feelings.

† Three dots ... mark the ellipses. Italics the answers of the children.

How many feet has the mole? *Four.* And it is therefore called...*a quadruped.* Where do most quadrupeds live? *Above the ground.* Right. What sort of fore-legs has the mole?—long or short? *Short.* Now, since animals live in such different situations, what should you expect them to be? (No answer.) Do you remember the lesson we had lately on birds? *Yes, Sir.* Well, what was said about land and water birds? *The water ones had webbed feet.* And why? *That they might swim.* But besides the swimming ones, there are some that go to the water and...*wade.* And what have they? *Long legs.* And besides, they have very...*long necks*—and...*short tails.* What would a pheasant or a peacock's tail be to them if they were wading in the sea or a river? *It would trouble them.* It would be...*cumbersome.* Without such a tail they are much more...*comfortable.* When you look at a land bird and a water one, and compare them, what do you notice—do you observe any difference? *A great difference in the way in which they are made.* What was the word that was formerly given, instead of the way in which they are made? Try to remember. *Structure.* Quite right; and they are made differently, or have a different...*structure*—because they differ in their...*ways of living*—or their... Who remembers the word that means ways of living? *Habits.* Now, all sit upright and attend. When you find an animal of a particular structure,* what will you be led to think about it? *That it has particular habits.* And if you are told that an animal lives in an uncommon place, or has particular habits, such as the mole, what will you expect it to be? *Of a particular structure.* All will now answer me. The form or structure of an animal is always well...*fitted to its way of living.* All again. The habits and structure of the animal always...*agree—suit one another very well.* We'll now hear this boy in the lowest seat repeat it... Quite correct.†

Many of you, I dare say, have seen what the mole makes in the fields? *Mole-hills.* If you take away the earth, what will you find below? *A round hole.* What size—large or small? *Like the hole in our water-pipe.* And out of this hole it has...*thrown all the earth.* In what direction does the hole go? *Downwards.* Yes, for a little, and then it goes far...*along.* I perceive most of you have seen mole-hills. Now, hands up all who have seen a mole. (Only two or three have seen the animal itself.) You who have seen a mole will tell about what size it is? *A rat.* Well, let us try to find out then, what kind of body would be best...*fitted*—for its...*place of living*—and its way...*of living.* What does it feed upon, do you think? *Worms and insects.* And what must it do to get them? *It must dig through the earth.* Just like a... Tell me any sort of people who dig along below ground—below the earth. *Miners*—or...*colliers.* But then the miner, when he makes his way under ground, what has he to work with? *Picks and shovels.* What does the mole use? *Its feet—its nose.* When this boy speaks of its nose, what other animal is he very likely thinking of? *A pig.* And if it uses its nose, what should it be? *Sharp and strong.* Just like...*the pig's*—which uses its nose for the...*same purpose*—for the purpose of...*digging.* It digs for...*roots.* But as the mole has more digging than a pig,—besides its nose, what will it also use? *Its feet—legs.* Which? *Its fore feet.* It will chiefly use its...*two fore feet*—for the purpose of...*digging*—because they are... *thick*—and...*short.* What do you observe on the toes of animals? *Nails, claws.*

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* However complex the word may be, when clearly pictured out, it may be used ever afterwards.

† Inverting or reconstructing the sentences, more especially in regard to juvenile children, is of great importance, for obvious reasons, as we have already stated.

Since the fore feet have so much more work than the hinder ones, you would expect them to be—stronger or weaker? *Stronger.* Quite correct. They are very...*strong*—and you would say, such strength is...*very necessary.* What kind of legs do you think will be most convenient under ground? *Long, short...* Whether will a tall or a short man get along a coal mine more easily? *A little man.* But the mole, if it had long legs, might make its hole...*larger*, says a girl. That is quite true, and in a large hole or gallery, a long-legged mole would go along as...*easily*—as a...*short-legged one*—would do in a...*small one.* But if the mole were to make a large hole, it would have more...*work*—and if more work, it must take a...*longer time.* Now, if moles are like children, they will be anxious to save their...*labor.* Which legs, then, will best fit the mole to save labor and time? *Short ones.* Short ones will be more...*convenient.* With short legs their work...*will be less.*

When a dog scrapes away the earth, where does it put it? *It throws it under his body.* Yes—between its body and the ground there is plenty of...*room*, because its legs are...*long.* But with legs very short, the lower part of the mole's body almost...*touches the ground.* And if it touches the ground, in what way will it be better to throw the earth? *Away by the sides.* All will repeat. The earth will be...*thrown back*—not under its...*body*—but...*by the sides.* And why? *Because of its short legs.* As it throws the earth back with its feet, what do they answer for? *A shovel.* Right; and a shovel is...*broad.* When it digs, it uses its...*feet*—like a... What do laborers use to break up hard ground? *A pick.* Therefore its feet must be...*sharp*—and... What else? *Strong;* and when the earth is loosened, it uses them for a...*shovel*—therefore the mole's feet should be...*broad.*

You told me before that the nose was...*sharp*—and round the shoulders how do you think it will be? *Thick.* How will the body be toward the hinder parts? *Smaller—Thicker.* Some say thicker, and one says smaller. Let us see. If this were the hole (drawing it on the blackboard, or forming the shape with your two hands,) and the body of the mole were large behind in this way—if it were to throw the soil back, what would happen? *It would not get past.* What would not get past? *The earth would not get past*—past the...*hinder part of the mole.* Surely; and then the mole could not...*get forward.* When it has got a quantity of soil past its body, what will it do with it? *Push it all back.* Yes, out of the...*mouth of the hole.* All will now tell me the shape the mole should be of. You have heard that its nose should be...*sharp and strong*—its feet...*broad*—its shoulders...*thick*—and its body growing rather...*smaller behind.*

What do you think the body is covered with? *Fur.* And whether should it be soft or stiff? Suppose an enemy of the mole to meet it in front, what would the mole do? *Run away.* But before it could run, what must it do? *Turn in the hole.* But you remember the hole is just about the width of its body—what must it do? *Go backwards.* Yes, it will run backwards till it comes to some...*opening*—or...*hole below*—and then it will run... How? *Forwards.* When it runs backwards, the hair would...*rub against the sides of the hole*, and the hair would be...*raised*—or...*ruffled.* And if it were stiff, it would be just like a... What do we use to take off the dust from our clothes? *A brush.* What, then would be done if it were to be brushing all the way backwards? *The earth would tumble in.* Right; and it would get into...*a heap*—and the poor mole would be...*stopt*—and... What would happen to the mole? *It would be caught.* Now, what kind of hair would be most suitable? *Soft.* Right; and if very soft, when you draw your hand along the back from the tail to the head, how will it be? *Nice and soft*—it will be nearly as smooth as when you...*draw it the other way*. Besides, if it were stiff, when the earth is moist, the animal would become... How? *Dirty*—the soil would stick on the...*stiff hairs;* but if it were soft, the soil or earth would...*fall off again*, and it would still be...*clean*. The hair of the mole is very soft, and is called...*fur*. God therefore has given the mole... what sort of hair? *Soft*—that can move as easily...*backwards as forwards*.

When earth or dust is falling all round us, as it will be when the mole is digging, what are we afraid of? *Our eyes*. Quite right; our eyes are very...*easily hurt*. There are some animals, like the hare, that have very large eyes, but besides being large, they are very... Do you remember what we said about the hare some weeks ago, when we had a lesson on that animal? *The eyes stand out*. Another word for standing out? *Prominent*. All will repeat the word that means standing out? *Prominent*. The hare's eyes are large and...*prominent*. And if the mole had such eyes, what would you say? *They would be hurt—they would be in the way*. What must we have besides eyes that we may see? *Light*. And where does the mole chiefly live? *Under ground*. And, under ground it is...*very dark*. When a collier goes down the pit, he takes...*a lamp;* but as the mole has no lamp, having eyes in the dark would...*be useless*. Will it have any need of eyes at all? *No, Sir*. This boy, perhaps, remembers hearing people say to others, You are as...*blind as a mole*. I must tell you that sometimes the mole comes above the ground, then eyes will be...*useful*. But as it is oftenest under ground among falling earth, you say they need not be...*large*—and especially they should not be...*standing out*—or...*prominent*. All will now repeat; the eyes should be...*small and low*—that is, sunk in... Where? *A hollow place*. And if sunk in a hollow place, what would happen? *They would not be easily hurt*.

We shall now go over the chief points once more, all answering. You think it should have its nose...*sharp*—and...*strong*—its legs...*short*—feet...*broad*—to make its way...*through the earth*. Its body thick at...*shoulders*—towards the tail rather...*smaller*—that earth may get... How? *Easily past*. Its fur would require to be...*very soft*—and its eyes prominent, or how? *Small*—and...*sunk in the socket*.

Now, look at this stuffed mole, and compare it with what you have told me. Every thing that you could think of, and a great...*deal more*—has been given by...*God*—to make the mole...*happy*—and to add to its...*comfort*. At once you see here the Creator's *wisdom*—and...*power*—and... What else? *Goodness*—to suit it for the kind of life God desired it should...*live in*.

PRACTICAL EXAMPLE III.

Stage III.—Air a Conductor of Sound.

Children, we are to have a lesson to-day upon sound.* What do you mean by sound, children? *Noise*. What is a noise? You hear my voice just now; do you call it noise? *Speaking*. True, I am speaking, and you hear me...*speaking just now;* but would it be possible for me to speak without you hearing me? *No, Sir*. Think for a moment. Am I speaking just now? *Yes, Sir, you are speaking to yourself*. I am speaking, you think, but you...*do not hear*. Now, why is it you do not hear? When you hear me or any one speaking, you...*hear*

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* It is well to tell the children at once the subject of the lesson.

a sound; or if I strike my hand on this...*desk*—you...*hear a sound.* You know what I am saying when you hear the sound of my...*voice*—and you know what I am doing by the sound of...*the hand.*

I wish to know why it is that I can move my lips without your hearing me speak, or lay my hand on this desk without hearing a sound? Tell me what sound is. I suppose I must tell you.* You all know what air is? *Wind.* Wind is certainly air—air in...*motion*, but if not in motion it still would—be... *air.* Air, you know (from former lessons) is a...*substance;* and however light air may be when compared with the...*desk*—still it is...*a substance.* We say "light as air," air, however, has...*weight.* Do you remember how heavy atmospheric air is? *It presses on all sides with a weight equal* to about 14 lbs. *on the square inch.*† It presses this way, and...*that way*—and...*every way*—equal to about...14 *lbs. to the square inch.* There is something substantial in any thing that may be beaten, or...*squeezed*—or...*pressed.* If I turn this slate on its broad side slowly, do you hear any thing? *No, Sir.* Now, I shall move it smartly, what do you hear? *A sugh.* What is a sugh? *A sound.* Is sugh the proper word, children? *No, Sir; sound.*‡

Now, children, tell me how is it that you hear me speaking? *By the air.* When I strike my hand on the desk, what happens? *There is a sound.* True, there is a sound; but how is the sound produced? We shall see how it is. When I strike my hand upon the top of this desk, it makes the desk... What does it make the desk do? *Sound.* Observe; I shall strike my hand upon this... *wall*, and then upon the desk, and you will tell me which gives the greater sound. Which? *The desk.* Why so? *It shakes more and vibrates.*§ You think the stroke made on the top of the table vibrates more than...*the wall.* Very well, then, why was there a greater sound from the table than from the wall? You told me that you heard me speaking by...*the air.* How do you think you can hear the sound of my striking the desk? *By the air.* And the sound from the wall? *The air.* Then why should there be any difference between the loudness of the sound from the table and the wall? (You don't know, I see.)

You told me that the atmospheric...*air*—the air that is in this...*room*—is...*a substance.* You saw me strike the air which you say is...*a substance*, very smartly with the...*slate*, and you heard...*a sound.* Now you also told me that the table vibrated that is...*trembled.* By vibrating, what do you mean? *Trembling or quivering;* that is to say, if the top of the table trembled or...*quivered*—it was set...*a moving*—or...*in motion.* The top of the table was not at rest, but... *in motion*—moving very...*quickly.* What did the top of the table strike against, for you know if the top of the table moved‖ it must move against something? When the top of the table vibrated like the top of a drum, what did it strike against? *The air.* The air being a substance, and filling every part of...*this room*—was struck quickly. How? *By the vibratory movement*—of...*the top of*

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* The trainer has developed or ascertained the amount of the children's knowledge. They knew the facts, but not the reason.

† The children are understood to have had lessons on air before, but none on sound.

‡ In many quarters of the United Kingdom, provincialisms will be given by children in the course of training; and this mode may be adopted to correct them.

§ This term, of course, had been pictured out during some former lesson on motion, and therefore is now used.

‖ Although the whole body of the table may vibrate, it is preferable to confine the attention of the children to one point, so long as your statements involve nothing erroneous or contradictory.

the table. And... What did the trembling or vibratory motion produce? *A sound.* The air was moved up and down quickly from its place. Where? *On the table;* and this rapid...*motion*—of...*the air*, which is...*a substance*—produced... *a sound.* Whether will there be a greater sound when I strike my hand smartly or softly upon the table? *Smartly.* Why? *Because it will vibrate the more.* The top of the table will rise up and...*down more*—and, therefore, it will... What will it do? *Sound the more.* You will hear a greater...*sound*—because the air is disturbed or shaken more by the greater vibration, than...*the little one*,—than by the less...*vibration.* But why does the wall, when I strike it with my hand, not make as loud a sound as when I strike it upon the table? *The wall does not shake the air so much*—being...*harder*—or rather, not so easily...*shaken.*

Tell me now, children, whether the air will sound when it is in motion or at rest? *When in motion.* Wind, you know, is...*air in motion.* You say you hear the wind when...*it blows*—that is, when the air is in...*quick motion;* and when it can not easily pass a house, or a...*tree*—it makes a...*noise*, or...*a sound*, and you say, O what a noise the...*wind is making!* but when the air is not in motion, or moving only very...*slowly*, you say, There...*is no wind.*

Now, children, tell me what air in motion is? *Wind.* You tell me, wind, or...*air in motion*—striking against a house or a man, makes...*a noise*, and a noise is...*a sound.* Well, if I strike my hand on the slate this way, against the air, what will it produce? *A sound.* And what does it do to the air? *Sets it in motion.* My hand, or this...*slate*, or any thing I strike the air with, moves it... *out of its place.* And where does the air go to that has been moved out of its place? *To another place.* And where does that air go to? *To another place*,—and so on, still to...*another place;* and thus—the whole air in the room will be... What will it be? *Set in motion.*

We might extend the subject of this lesson, and proceed to picture out whether sound travels in straight lines as light does; for example, as in the case of the flash from the firing of a gun to the eye, or the report of the same to the ear, and why the sight and the sound are not simultaneously seen and heard. Also, by a shadow intercepting the light. Further, that light is not seen at all through an opaque body like a wall, and yet sound is heard through it although faintly. Why so? Again, small waves visibly come in circles direct to the person who may be bathing in the sea, but do not stop here, but come round to the opposite side of his body in smaller circles, diminishing in hight as they increase in diameter. This appears more plainly from a stone being thrown into a pond, each wave being succeeded by another, until they reach the side.

From all these points, when pictured out, the children will come to the conclusion, and tell you that light travels more quickly than sound, and in a different form—that light passes through the air in (pretty nearly) straight lines—that SOUND is not only conveyed by the air, but that it must move in circles. Thus we may trace the wisdom and goodness of God to us his intelligent creatures, in the varied effects of light and sounds upon the eye and ear.

It is the experience of almost every trainer, after conducting training lessons, that he has acquired for himself some minute points of knowledge of which he was formerly ignorant, or which had escaped his observation; and at the same time, established others of which he may have had only a very indefinite conception—practice, therefore, adds knowledge to the trainer as well as to his pupils.

SELECTION OF SUBJECTS FOR ORAL GALLERY TRAINING LESSONS ON NATURAL SCIENCE AND COMMON THINGS.

The trainer, whether conducting an Initiatory school or a Juvenile, may choose one particular lesson for each day, or he may take them progressively as they appear on the following lists. These lists are not presented because they are either complete or the best that might be selected, but simply as suggestive of such a useful course as that over which a master might successfully conduct his pupils in a shorter time than may be anticipated. The list No. I. should be considered more as initiatory and preparatory to No. II.; and therefore the subjects therein specified, when taken up for the first time with children of whatever age, are intended to be treated more generally. *The broad outlines* being pictured out first to serve as a solid foundation, and the more minute points, save such as may likely be interesting to the pupils at the time, being reserved to a period when their minds are better prepared to receive them. And in no case should a technical term be employed till the children have first had conveyed to them a clear perception of the idea therein involved.

The subjects contained in either list, more especially those in the first, are not designed to be taken up consecutively. The time for selecting a particular lesson can not be prescribed; it should rather be suggested by circumstances, particularly in an Initiatory Class—as by the season of the year, events of the time, nature of the weather, what the children may have seen or met with in their walks, any object exciting their curiosity or observation, what they may have heard that interested them, by their toys and by their games, at home or in the play-ground, etc., etc.

The lessons will thus prove greatly more natural, pleasing, and efficient, than if given in any connected course, however well arranged; as in the earlier periods of life, and even considerably beyond it, a mind free to be guided by the natural expansion of its faculties resents whatever is continuous. Here a little and there a little, is the natural principle of action. Any subject, therefore, however interesting, will prove tiresome if prolonged beyond due bounds.

List No. I.—Initiatory or Infant Department.

In drawing out these lists, as well as those of the Bible lessons, our greatest difficulty has been to limit the numbers, and yet present a sufficient variety of points for the school trainer to picture out as daily lessons, each occupying from twenty minutes to half an hour. One or other of such lessons as appear in Lists I. and II. form the basis of a daily Oral Secular Training Lesson both to pupils and Normal students.

1. *Grass*—Why the earth covered with it.

2. *Corn*—Its varieties, and the comparative amount of nutriment possessed by each sort.

3. *Peas*—Mode of supporting stalks.

4. *Potato*—Its history and qualities—contrast with bread.

5. *Plowing*—Uses of.

6. *Harrowing*—Wherein different from Plowing.

7. Advantages of Punctuality and Order—picture out—give illustrations.

8. Cleanliness and neatness in person.

9. *Bread*—Different kinds—how made.

10. *Tea and Coffee*—Where grown, and their use.

11. *Sugar*—Where grown, and mode of culture.

12. *Refining* of Sugar.

13. *Molasses*—What, and how prepared.

14. *Milk*—How obtained, and its uses.

15. *Butter*—How made, and how preserved.

16. *Bee*—Outlines of its habits—Industry.

17. *Foot of Fly and Boy's Sucker*—Compare—Philosophy of these.

18. *Honey*—What is it, and how obtained.

19. *Bee's Wax*—How formed.

20. *Wisdom* of Bee displayed in construction of cells.

21. *Spider*—Nature and habits—food.

22. *Spider's Web*—How formed.

23. *Ant*—Its nature and habits.

24. *Ant*—Different kinds of.

25. *Caterpiller*—Its transformation.

26. *Silk-worm*—Its natural habitat—on what fed—how kept in colder climates.

27. *Silk*—Whence and how obtained.

28. *Silk*—Contrast with cotton and sheep's wool in the formation of yarn or thread—comparative strength—why.

29. *Covering of Birds*—Admirable adaptation to their mode of life.

30. *Nests of Birds*—Why of different colors, and why instinctively placed in different positions.

31. *Covering of Waterfowls*—Contrast the hen with the duck as suited to their particular mode of life.

32. *Web-footed Birds*—Enumerate—why webbed.

33. *Beaks of Birds*—Contrast the hawk with the raven and swallow.

34. *Waders*—The Heron, etc.

35. *The Camel's Foot*—and the reindeer's—wisdom in their formation—habits.

36. *The Dog and the Cat*—Compare their nature, habits and uses.

37. *Elephant's Proboscis*, and the Cameleopard's long neck in relation to their habits and mode of life.

38. *Hooked Bills and Claws*—Contrast—why so formed—compare with the Sparrow or Lark.

39. *The Sloth and the Hedgehog*—Means of defence—habits.

40. *The Lion and the Bear*—Nature—habits—means of attack and defence.

41. *The Hare and the Partridge*—Means of defence—habits.

42. *The Whale*—Where found—habits, size, how defended from cold.

43. *Sheep's Wool*—Why different in texture in different countries—advantage of this to the animal, and to manufactures.

44. *The Mole*—Its habits—mole-hills—fore-feet—means of defence—nature of its hair or fur, compare it with that of the dog or sow.

45. *The Structure of the Mole.*

46. *The Beaver*—Its teeth and tail—habits, mode of constructing its habitation—use of its fur.

47. *Rats*—Are they of any use—may they and such vermin be killed—and when—(nothing made in vain.)

48. *Clothes*—Of what use—would certain sorts be equally suitable in all climates.

49. *Dwelling-Houses*—Effects of overcrowding.

50. *Imperfect Drains*—Picture out consequences upon health.

51. *Water*—Weight—composition and uses.

52. Why does water rise in pipes to the level of fountain from which it is taken—picture out the philosophy of this.

53. *Perspiration*—Sensible and insensible—picture out the uses.

54. *Waterproof Clothes*—Picture out their effect on health.

55. *Reaping.*

56. *Winnowing of Corn*—Various modes of.

57. *Nostril*—Position and use.

58. *Weaving*—Picture out the principle, and compare it with sewing.

59. *Felted Cloth*—Picture out the principle, and compare it with woven cloth.

60. Compare the teeth of a Cow with those of a Beaver.

61. Various modes of catching fish.

62. *Frog*—Nature—habits—if of any use—(nothing made in vain.)

63. Compare the foot and feathers of the hen and duck in respect of their habits.

64. *Coral*—How produced—where—results.

65. *Oyster*—Its shell—habits.

66. Mode by which shell-fish attach themselves to rocks.

67. *Leech*—how it inflicts a wound—uses.

68. *Earth-worm*—Its use to the farmer.

69. *Bat*—Its habits—construction.

70. *Nettle*—Its uses—where generally found.

71. Mode by which animals defend themselves—horns—feet—speed, etc.

72. Lead and iron—compare qualities and particular uses of each.

73. Beat iron and cast-iron—how made—compare qualities and uses.

74. Compare the screw, pulley, and saw.

75. Teeth of animals—distinguish the variety and adaptation to their mode of living.

76. Flesh of the different animals used as food by man—compare beef, mutton, lamb, pork, venison, fish, and fowl.

77. Compare cold and warm-blooded animals.

78. Herring—habits—vast numbers, etc.

79. Compare clay, sand, lime, and other soils—uses.

80. Needle-making and pin-making—with their different forms and uses.

81. Greatness and goodness of God perceptible in the least things.

82. Comparative use of roots, barks, stem, and leaves of plants—circulation of the sap—how new wood deposited, etc.—wisdom displayed in all these.

83. The distinction between boiling, roasting, and stewing.

84. Yarn and Thread—Picture out the process of making each.

85. Warp and Weft—Is there, or should there be a distinction in strength.

86. The Cotton Plant—mode of preparation—why not grown in this country.

List No. II.—Juvenile Department.

1. *Heat*—Its nature—sources of.

2. Effects of heat on solids.

3. *Conduction of Heat*—Application to clothing—compare woolen and linen clothes—why a difference.

4. *Heating of apartments by Steam*—Do black or white pipes radiate best.

5. *Why does ice float*—Train out the advantages of this in regard to lakes, ponds, etc.

6. *Evaporation*—What is it—and how caused.

7. Why do we water our streets in summer.

8. *Wind*—What is it—and how produced.

9. Philosophy of drafts and air-currents.

10. *Land and sea-breezes*—How produced.

11. *Air*—Component parts and uses.

12. *Water*—Component parts and uses.

13. *What is meant by a vacuum*—and how produced.

14. Picture out simplest form of barometer.

15. Why does the barometer sink as we ascend a hill or in the atmosphere.

16. *Rain*—How produced—general form of the drops—why—where should rain be most abundant—and why.

17 *Formation of Clouds*—How kept buoyant in air.

18. Reason for winter clothing.

19. *The Quill Pen*—Its history.

20. Use of the pores of the body.

21. *The Eye*—Its position and construction—wisdom displayed—what effect if otherwise placed.

22. *Tears*—Their nature and use.

23. *Nails of the fingers and toes*—Compare with horns, hoofs, etc.

24. *Position and use of the thumb, and little finger*—Picture out wisdom in the various lengths of the fingers.

25. *Mortar*—How formed—why mixed with hair.

26. *The Roots of Trees*—Nature and use—comparison between that of the Italian poplar and the oak.

27. *Engrafting*—Picture out the principle of.

28. *India-rubber*—How and where obtained—uses.

29. *Gutta-percha*—How obtained—its uses.

30. Why does an iron vessel float.

31. Paving of streets, and of what materials.

32. *Glass*—Of what composed, and how manufactured.

33. Effect of pouring hot water into a glass suddenly—picture out the philosophy of this.

34. *Making of Shot*—Why round.

35. *Horseshoes*—Why does the animal require them.

36. How are we enabled to fix horse's shoes without inflicting pain.

37. *Paper*—How and from what manufactured—when first made for common use.

38. *Printing*—Picture out principle of, and when discovered.

39. Given the river system of a country to determine its mountain system, or *vice versa*.

40. Refining of gold, silver, etc.

41. *Gunpowder*—Whence formed.

41. Why does gunpowder propel.

42. The philosophy of keeping the body clean by water and rubbing.

43. Why does the firing of a musket produce a report when an air-gun does not.

44. *Air-gun*—Principle of.

45. Exhausting Syringe.

46. *Syphon*—Nature and uses.

47. *Intermittent Springs*—Why does not the water flow continuously.

48. *Magic-Lantern*—Principle and uses.

49. *Bramah Press*—Picture out principle of—uses.

50. Picture out the simple principle of distillation.

51. *Candles*—Of what formed and how.

52. *Soap*—Of what is it composed—and how manufactured.

53. *The Sun-Dial*—Principle of.

54. *Common Clock*—Construction of.

55. *Umbrellas*—Why so formed—when first used.

56. *Coal*—Its origin and how obtained—uses.

57. *Gas*—How formed—when first or generally used.

58. How is gas transmitted through our towns.

59. The Lightning Conductor.

60. Best mode of kindling a fire, so as either to have what is termed a brisk or a slow fire—philosophical mode of placing the coals so as to have either.

61. Why is snow white.

62. Picture out the uses of snow in protecting ground from severe frosts, and in supplying moisture, (in Siberia temperature of *air* is often below Zero, whilst the *ground* covered with snow is not much below freezing point.)

63. Picture out the reason why snow melts so slowly, and the beneficial effects of this, contrasted with what would happen if the contrary were the case.

64. *Snow-line*—Why does it rise as we approach the equator.

65. *Effect of light upon Vegetation*—(A vegetable which grows in the shade is pale and sickly.)

66. The reasons for the various forms of the external ear.

67. Why does fruit ripen more quickly against a garden wall, than if standing alone.

68. *What is Smoke*—Should any smoke be permitted to ascend the chimney—can this be avoided—picture out the philosophy of the principle of preventing smoke.

69. Why does a gardener cover his flower-beds with matting in a clear calm night.

70. *Circulation of Sap in Trees*—How effected.

71. Preservation of seeds of plants.

72. *Dispersion of seed*—How effected.

73. *Leather*—What is it, and how manufactured.

74. *Twilight*—How produced.

75. Why is there longer twilight at the poles than at the equator.

76. Why should we not eat the rind of fruit.

77. *The flying of Birds*—How effected.

78. Why are drops of water, mercury, etc., globular.

79. Thunder and lightning—distinguish the causes and effects.

80. Compare vapor, rain, dew, hail, and snow—outlines of, how produced.

81. Why can you put salt into a tumbler filled with water, and yet the water does not run over.

82. Why does one's image appear as far behind a plane mirror as he is before it.

83. *Barometer*—Principle and uses.

84. *Thermometer*—Picture out principle of.

85. *Pendulum*—Effect of heat and cold upon it.

86. Show how you would give children an idea of a map.

87. *What is money*—Why have coins.

88. *Circulation of Blood*—Compare with the circulation of juices in plants and trees.

89. *The Condensing Syringe.*

90. *The Air-pump*—Construction—uses.

91. *Davy's Safety-Lamp*—The philosophy of—uses—the radiation of heat. Why do we see the flash of a gun when fired before hearing the report—the philosophy of both.

92. By what means do fishes breathe.

93. Picture out the best means of ventilating a room, so as to have in it warm air and yet fresh.

94. The philosophy of making good tea, and whether water long boiled or just come-a-boil, is preferable.

95. Causes and cure of dry rot.

96. Whether will a ship sink deeper in the salt sea or in a fresh water river—the reason.

97. Picture out why the earth and moon keep in their orbits round the sun.

98. Why the length of day varies from the equator to the poles.

99. Gold and lead—compare qualities, malleability, value, ect.—uses.

100. Rope—compare relative strength of one made from cotton, flax, and sheep's wool.

101. Candle—why does the flame ascend—philosophy of this.

102. Rainbow—picture out the cause.

103. Particles of air and water—prove what form the particles are of.

104. Prove that air has weight—changes of weight.

105. Dyeing—picture out why wool is difficult of being dyed an engrained color.

106. Hairs—why are we apt to catch cold when our hair is cut—construction or form of hairs.

107. Steam-engine—picture out the parts and principle.

108. Balloon—cause and principle of its ascension.

109. Mineral strata—if any advantage by being placed in a slanting and not perpendicular direction—design and wisdom.

110 Why may a candle be shot through a wooden door—give the philosophy of this.

111. Lever—principle and use.

112 Volume and power of water when turned into steam—illustrate this by examples—tea kettle, etc., etc.

113. Phases of the moon—causes.

114. Sun or moon—causes of an eclipse.

115. Why fish die when taken out of the water—why a dead fish turns on its back in water—why blood cold, and of a blue color.

116. Sponges—whence derived.

117. Beneficial influence of the sun upon the creation.

118. Contrast iron and gold.

119. Means of supplying water to a city—how the water made to rise, etc.

120. Flowers—stem, flower-cup, petals, stamens, pistils—why some droop—difference in structure of those and upright ones, etc.,—abundance of flowers—use of same in pasturage.

121. Is vegetable life favorable to animal—picture this out philosophically.

122. Bring out the fact that the elastic force of air is proportioned to its density.

123. Train out the mode of determining latitude by the elevation of the Pole.

124. Bring out the ordinary method of determining longitude.

125. Different modes of noting time.

126. Center of gravity—which is safer, to rise or sit in a high-seated carriage, should the horses run off, and why.

127. Distinguish between wind, storm, hurricane.

128. The principle of Bramah's Press.

129. Picture out the principle of operation between a knife and a saw.

130. Electric Machine—the principle.

131. Galvanic Box—the principle.

132. The Sun—distance—velocity of its light—how ascertained.

133. Planets and Fixed Stars—distinguish—how—distances.

134. Comets—what supposed to be—velocity.

135. The Hand—principle of its motion—why fingers and thumbs of different lengths and thickness.

136. Gas—Effects on health—of permitting more to escape than can be consumed in ordinary burners—the principle of this combustion.

137. Steam Engine—effect of filling the box with steam, and condensing it alternately.

138. Distinguish the difference in fiber or staple between wool, cotton, silk, and flax—whence derived.

139. Dry-toast—effect of laying one slice above another.

140. The Human Frame—what latitudes most favorable to vigorous development.

141. Is light material, or immaterial—prove this.

142. Distillation—philosophy of—why is the spirit evaporated and then condensed.

143. The uses of Lakes—*regulators* of rivers.

144. Hoar-Frost—what is it—how formed—wherein does it differ from dew.

145. A laundress drops a little saliva on her smoothing iron to test its heat—on what principle.

146. The *Wedge*—the principle of.

147. The *Inclined Plane*—uses in every-day life.

148. Where should a bed be placed—near the floor, or at some distance from it, and why—picture out the effects upon health.

149. The *Telescope*—in its simplest form, what is it.

150. The Microscope—in its simplest form, what is it.

151. Why is it dangerous to drink cold water when the body is much heated.

152. Bathing—whether should a person bathe when the body is perfectly warm, or when cold—picture out the effect in both cases.

153. Why is it dangerous to bathe when the body is heated after much exertion.

154. Why is the horse fitted for bearing burdens, and the ox only for drawing.

155. Where are flies and other insects during winter.

156. How is a fly enabled to walk on the ceiling.

157. The helm of a ship—on what principle is it constructed—compare with the tail of a bird; for example, the swallow.

158. Bird's nests—Their position and color.

159. Why is a house built of stone warmer in Winter and cooler in Summer than one built of brick.

160. Windmill—what is the best position of the arms to secure the greatest amount of pressure from the wind.

161. The adaptation of food plants to climate.

162. Why is it colder with us in Winter than in Summer, though we are nearer the sun.

163. Effect of oceanic currents on temperature.

164. Instinct and Reason--illustrate and picture out.

165. Distinguish between a mineral, a plant, and an animal.

166. Why is the west of Europe warmer than the east.

167. The Snow Line—what causes it to ascend or descend.

168. Compare the foot and bill of the hen and duck in regard to their mode of life.

169. The philosophy of stirring a fire.

170. Why does gas or candle lights burn dimly sometimes in a crowded church.

171. The philosophy of airing a room from without. If by a window, whether top or bottom.

172. Why do the waves from the paddles of a steam vessel continue to roll till they reach the shore.

173. Prove how light travels—the rays of the sun for example.

174. Prove how sound travels—straight, curved, or how, by examples. The philosophy of this.

175. The philosophy of *deafening* the floors and walls of a house.

176. The philosophy of a boy's sucker.

177. The principle of a pop-gun.

178. Why does water rise to its source.

179. Compare lead and iron—qualities and uses.

180. Why do servants not clean or clear up windows properly with a dry cloth.

181. Picture out the operation of the axe and the saw, philosophically.

182. Picture out the chemical process, and effects of boiling, baking, and roasting.

183. The philosophy of preserving eggs *fresh* for weeks or months—we have here the pores in the shell—the principle of evaporation through those pores—why, when long kept and shaken, they may give a rattling noise. Effect of stopping up the pores by melted butter, lime, etc.

184. Effect of snow during winter on the surface of the ground, and on plants.

185. Much of the earth's strata—mineral ores and coal—are placed obliquely, at least not horizontally. Is this an advantage or disadvantage to man.

186. How earth and moon kept in their orbits.

187. The science of the tides.

188. Trade winds—how regulated.

189. The principle of the common bellows.

190. Why does the flame of a candle ascend—the philosophy of this.

191. Prove, by illustrations, of what form are the particles of air and water.

192. The use of the root of a tree, shrub, or vegetable—with their comparative size and shape to the plant itself.

193. Distinguish the difference of the bills, claws, and teeth of various animals, in regard to their mode of procuring food.

194. The philosophy of a glass being apt to break when hot water is suddenly poured into it.

195. The principle of the LEVER, in its simplest operation.

196. What is electricity—how produced—(sealing wax—a cat's back when rubbed in the dark, etc.)

197. Lightning—how communicated—lightning-rod.

198. The electric machine—its construction and use.

190. The best mode of sweeping a floor so as to keep down dust.

200. Glass—of what formed—why transparent—when was it first used.

201. The effect of rivers as leveling agents. Illustrate—the Rhone—Nile, etc.

202. Why do rock cuttings in railways gradually crumble—(effect of air and water.)

203. Picture out the difference between thread and yarn—how made.

204. Why is sheep's wool more elastic than cotton wool.

205. What is smoke—The philosophy.

206. Why is the sea not increased notwithstanding the quantity of water that runs into it.

207. The atmosphere—what is it.

208. What is coal—where found—in what form are the strata generally found. *Wisdom.*

209. In placing coals for a brisk or a slow fire—picture out which way you would place the strata of the coal for either.

210. Compare weaving and sewing.

211. The Ant—habits.

212. The Beaver—habits.

213. Caterpillar—transformation.

214. The principle of turning water into steam.

215. The comparative nutriment in potato, flour, and oatmeal.

216. Picture out the principle of engrafting.

217. Picture out the different effects of a screw nail and a common nail.

218. Picture out the difference, if any, in water just "come-a-boil," and water that has been boiling a quarter or half-an-hour, in making tea.

219. Compare the science of the telescope and the microscope.

220. The philosophy of the motion of the circulating swing in the play-ground, comparing it with the sitting-swing, and their effect on health (the one throws the blood toward the head, and the other toward the feet.) Gravitation, capillary attraction, and centrifugal and centripetal forces—all involved in this.

The master trainer will keep steadily in view that every point of research in an oral training lesson has its less or more intimate associations with other points in science, however common or familiar the object—the hand, eye, and tongue with the brain—the foot with the knee—and the vacuum with atmospheric pressure, as in "*The Boy's Sucker*," etc.

The foregoing points, each forming a training gallery lesson, and pictured out in their outlines and more common uses, will prepare the pupils to advance stage by stage, and step after step, to other more minute practical points.

List No. III.—Senior Department.

The following has been gone through most intelligently, twice or thrice, with a class of forty pupils (boys and girls,) in one of the training schools in Glasgow:—

Matter—What signified by the term—its general laws and properties, impenetrability, extension, figure, divisibility, and inertia—resolution of forces, etc., etc.

The earth—Its form—how proved—measurement and magnitude—proportions of land and water on its surface. Explanation of the terms, latitude, longitude, equator, ecliptic, tropic, arctic, antarctic, zones and poles, horizon and cardinal points.

Its Motions—Their causes and effects—the alternation of the seasons, and of day and night with evening and morning twilight.

Inequalities of the Earth's surface—Mountains, valleys, table-lands, and plains under the various names of blanos, pampas, savannahs, prairies, and steppes, with their properties and uses.

Causes of change in the Earth's surface—Coral insect—volcanoes, active, intermittent, and extinct—earthquakes—the theory of volcanoes and earthquakes, with their varieties and an outline of the volcanic world, with the changes being there produced—detrition of rivers and their deposits in lakes and seas—action of tides—and the degradation of mountains by the influences of frost, air, and water, etc.

Varieties of Climate—In different latitudes and at different altitudes—in the same latitude and at the same altitude—circumstances affecting it, such as soil, shelter, inclination of the land, insular or continental position, proximity to frozen regions of arid deserts, etc., etc.

Rivers—Their origin, increase, and destination—watershed of a country—why does the middle of a stream move more rapidly than the sides—the motion of a fluid how accelerated in a confined channel—whirlpools—rapids—cascades and cataracts—how tracing the direction of rivers on a map gives the inclination of the land—their classification as to length—how the extent of their course generally determines as to their being navigable—streams, temporary and perennial—the properties and uses of rivers.

Lakes—Salt and fresh—their various classes and elevations—their properties and uses.

Seas and Oceans—Their varieties of temperature and depth—advantages derived from the sea—why salt—why in constant agitation.

Water—Salt and fresh—why former more buoyant than the latter—why some bodies sink and others swim—specific gravity of bodies—mineral waters—why purest water insipid—springs, their sources—permanent, intermittent, and thermal springs—ancient and modern modes of conducting water—its properties and uses.

Tides—How produced and regulated—phases of the moon—eclipses and causes—harvest moon.

Currents—In the ocean—polar, equatorial, contrary, and under-currents, with examples, and how proved to exist—how temperatures of seas thus effected—how drift-wood, seeds, etc., thus carried unerringly to distant shores.

Atmosphere—Its hight—its composition—oxygen, nitrogen, hydrogen, and carbonic gasses—means appointed by Providence to preserve the air in a state capable of sustaining animal life—whether more wholesome to have growing plants in a sitting room by day or by night—why the air of cities more impure than that of the country—the general properties of air and its important uses both to the animal and vegetable creation—breathing and burning compared—construction of the air-pump.

Heat—Natural and artificial—latent heat made manifest by friction, percussion, compression, and produced chemically—spontaneous combustion, conduction, diffusion, radiation, reflection, and absorption of heat—colors which absorb and radiate best—its expansive effects on various bodies—on the air, rarifying it and producing currents or winds.

Winds—Permanent, periodical, variable, and local, how accounted for—whirlwinds and hurricanes—various velocities, temperature, and names of winds—why a gale in winter heavier than one in summer—uses of storms—application of the winds by man.

Effects of Heat on Water—Producing vapor—tendency of vapor to ascend—formation of clouds—condensation of vapor by cold—descent of rain—why in globules—formation of snow—why white—of hail, of fog, of dew, and of hoar-frost—explanation of the forms they assume—the rainbow—how produced.

Thermometer, Barometer, Diving-bell and Apparatus, Syphon, Balloon, and Water-pump—Principles of construction.

Distribution on the Earth's surface of Vegetables, Animals, and Man—What is meant by an Organic and what by an Inorganic substance.

Difference between a *Mineral*, a *Plant*, and an *Animal.*

Distinctive Characteristics of Man.

Divisions and *identity* of the *Human Race.*

Wisdom of God in connecting the different parts of Nature.

MINERAL KINGDOM—Mines in Great Britain, why superior to those of any other kingdom, though not supplying the precious metals—Iron—Tin—Copper—Lead—Mercury—Zinc—Silver—Gold—Platina—Sodium—Magnetic Ore, etc., with their properties, process of manufacture, and uses to mankind.

Rocks—Different formations, granite, limestone, flint, freestone, slate, alabaster, mica, asbestos, petrifactions of various kinds, and a few of the more common and remarkable crystals—clay and soil—fossil remains of animals and plants, etc.

Coal—Its formation—manner of deposit—varieties—association with iron ore—manufacture of coal gas—best position for the gas works of a city, etc.

Salt—As found in mines, and manufactured from sea water or salt springs—its general distribution in nature, and valuable qualities.

Naphtha, Nitre, Tar, etc., etc.

Sulphur—Its properties, and in what kind of countries to be principally found.

VEGETABLE KINGDOM—General physiology of plants, aquatic and terrestrial—

their divisions—organs, roots, stems, branches, and leaves, with their various functions—the sap, flower, and fruit—varieties in the manner of the growth of trees—changes of vegetation, with the varied condition of climate—air plants, parasites, moss, fungi, fern, lichens, sea-weed, etc., etc.

Vegetable Productions—How those of hot, cold, and temperate countries may all be found in the same latitude—their preservation, and the various natural agencies contributing to their diffusion, as the currents of the ocean, winds, and migratory birds—man a voluntary agent in effecting the same object—adaptation of food plants to climate reflecting the design of the all-bountiful Creator as to the diffusion of the human family.

Animal Kingdom—Animal life, its effects—divisions of the animal kingdom—the integuments of the animal body—pores and their uses—bones, cartilage, muscles, lungs, heart, and vessels of the human body—respiration—circulation of the blood—why warm in some animals, and cold in others—blue and red blood, how these colors alternate—the teeth—the eye, its construction and adaptation to the wants of various animals, as in the case of fish, birds, insects, animals of the chase, and those of nocturnal habits—organs of support and motion—animal mechanics—nervous system—human brain, its protection and position, and its size compared with that of other animals—organs of sense and voice—difference in the form of man and that of other animals—instinct of man and animals—clothing of man and other animals, that best suited for different climates—effects of climate upon animal clothing—uniform heat of the human blood in all latitudes, circumstances accounting for the same—change of food and clothing requisite for various seasons and situations—how man fitted to be an inhabitant of all climes—wherein man superior to the animal creation—reason—beauty and perfection of mind and body—preservation of health, influence of cold upon it, of exercise and rest, pure air, and the regulation of the temper and passions—man's mental and moral nature—his high responsibility.

Miscellaneous Subjects.

Attraction of Gravity and Cohesion—Chemical, capillary, magnetic, and electrical attraction—attraction which all masses of matter have for each other—disintegration and decomposition of bodies—their integrant and constituent parts—center of gravity—condition of standing bodies—an arch, the keystone, etc.—centrifugal and centripetal forces—pendulums, principle of motion—various kinds—adaptation to different latitudes—influence of heat and cold upon them—mechanical powers—their various combinations in different kinds of machinery—the advantages and power of steam in working the same—principle and construction of the various kinds of steam engine at different times in use, and of that at present employed—invention of the screw, and its application to the propelling of ships.

Magnetism—Discovery of the magnetic ore, and origin of the name—its properties—power of communicating its attractive influence without loss of strength—different modes of making a bar magnet—discovery of its polarity—its earliest employment as an indicator of the cardinal points—when, how, and by whom first applied to navigation—construction of the magnetic mask and mariner's compass—deranging influences to which the latter is subject—necessity of adjustment, generally after lengthened voyages or long detention in harbor—the earth a magnet—its power of magnetizing iron fixed in contact with it for a lengthened period, as iron palings, etc.

Electricity—From what substances first obtained, whence the name—electrics and non-electrics—various means of collecting it—electrical conductors and non-conductors—insulators—Leyden jar—dischargers, etc.—electric eel—production of electricity by the escape of steam through a narrow aperture—principle and construction of the ordinary electrical machine, and of the hydro-electric machine—identity of electricity with lightning—lightning conductors, why made to terminate in the ground and generally in a well—effect of the fluid when discharged into a vegetable or animal—thunder, how produced—auroræ boreales vel australes.

Galvanism—Its discovery, and the origin of its name—connection between galvanism, electricity, and magnetism—construction and principle of the galvanic battery—conducting of galvanism—its effect upon the animal body, and how transmitted—its application as a medical agent—principle and arrangement of the electric telegraph.

Sound—How produced and conveyed—echoes—bells—speaking trumpets, etc.

Light—Natural and artificial—effects of light on vegetation—various sources of artificial light—its mode of traveling, wherein different from that of sound—refraction—colors—bleaching—reflection—mirrors, principles and construction of plain and convex—concentration of heat and light—prisms, burning glasses telescopes—the daguerreotype.

Ventilation—Of private dwellings, places of public assemblage, coal-pits, etc., etc.—evils of bad ventilation—fire-damp—dry-rot, how originated, the cure—pestilence, etc., etc.—Sir H. Davy's safety lamp, principle and construction.

Smoke—What is it—must it of necessity exist—why it ascends the chimney curling in its ascent—what becomes of it—what is meant by a draught—why do some chimneys smoke, and how best prevented—why does a paper held in front of a fire increase its intensity, why are fires and stoves placed near the floor and not near the ceiling—why kept black—how heat may be conveyed from one apartment to another with little loss, etc., etc.

Ice—Process of congelation—why ice lighter than water—why formed on the surface of a pond and not at the bottom—why shallow water freezes sooner than deep—why water pipes liable to burst during frost—use of frost in the economy of nature—icebergs—ice-islands—ice-flows—drift, sliding, creeping and ice avalanches—extraordinary effects of the last—snow mountains and glaciers—line of perpetual congelation.

Boiling—Why a boiling fluid in continual ferment—why heat applied to the bottom of the vessel—why a dense fluid, or water slightly mixed with oil, retains heat longer than plain water—why hot water melts salt, sugar, etc., sooner than cold—the best method of melting such substances as sugar in a liquid—the degree of heat at which different fluids boil at the level of the sea—why they boil at a less degree on the summit of mountains—how so great a loss of heat in cooking at such an altitude as the Hospice of St. Bernard.

Solar System—Sun's distance from the earth—beneficial influence upon creation—apparent path—zodiac—tropics—nodes—solstices—aphelion and perihelion—why sun's warmth more felt in northern latitudes when the earth is in aphelion—sun's eclipse, equinoxes, etc., etc.

Moon's distance from the earth—influence on the sea—tides—lunar eclipse, etc.

Fixed stars—planets—comets—polar star—the galaxy, etc.

A class that has been carefully conducted through such a list of subjects as the preceding, will be prepared to enter upon a more consecutive course with advantage. We therefore present the preceding lists, by no means recommending that they should be strictly adhered to, but that the order of the subjects should somewhat vary according to circumstances. Whatever may be the order, however, in which the several lessons follow, we consider that to more advanced pupils a proper classification of the subjects afterwards will prove beneficial. The repetition of a lesson under the same head is no objection whatever, as it is impossible to exhaust all the points of any one subject with young children. The trainer will therefore, of course, *according to the system*, revise and proceed upon the previously acquired knowledge which he ascertains that his pupils possess.

Technical terms employed in describing the various departments of nature and art are acquired to a large extent in the ordinary process of picturing out such lessons, and thus the student is prepared for proceeding with a more consecutive and extended course—also for apprehending more fully the phraseology of books and lectures on the different branches of science.

Each of the preceding points may be pictured out as a Training Gallery Lesson in school on Natural Science and Common Things, and may occupy from twenty minutes to half-an-hour daily.

Thirty years ago, so far as we know, we were the first to introduce Training Lessons on Natural Science suited to ordinary life and things. In the Model Schools of this Normal Seminary, it has been the practice ever since. The students have also been trained to practice it in the various schools to which they were appointed. The liberty of doing so, however, has not always been granted by Directors, who themselves had not been so instructed and trained. I trust this thoroughly intellectual, and highly useful *practical* principle will now be more heartily and systematically followed in our schools and colleges than it has hitherto been.

The simple reading of some point in Natural Science—a few only of which are to be found in school-books, and from which the teacher may put a few questions on the facts stated, is by no means sufficient to a clear and edequate perception of the subject. Questioning, it is evident, amounts merely to an examination—not training;—and is not an addition to the knowledge already possessed by the pupils. It exercises their memory of facts, but does not prepare their minds to draw the lesson or give the deduction. Besides, no extract on science in a school-book can convey one-tenth of the knowledge that may be, and actually is communicated by a practical schoolmaster during an Oral* Training Lesson. Sections III. and IV. present the theory of the principle—Section V. the practical working.

Be content with analyzing, illustrating, and thus picturing out in words to the mind's eye of your pupils, *one point* at a time *thoroughly*, rather than several points *imperfectly*. Condescend to use their simple words in the first instance, and rise progressively to the use of more complex terms—each term being pictured out to the understanding before being used. Do not forget *to invert* the sentences in the progress of the lesson which you accept as correct answers, forming one or two ellipses; you may then demand and expect a simultaneous answer from every child in the gallery.

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* When we say GALLERY (Lesson) we mean this. Although the Training Lesson to one pupil is the same as to fifty or a hundred, yet the conducting of it with one is less efficient than with five—five also is decidedly less so than with fifty, arising from *the sympathy of numbers* (see Chap. XI.:) and fifty can not be so conveniently seated for every purpose and variety of instruction and training as in a Gallery

Many persons object to the Training System because they find it can not be adopted at once, by a highly-educated individual, having read a treatise on the subject, or having observed the practice in a Model School. We are not acquainted with any art that can be so adopted, without *training*. Most certainly this system of cultivating the whole child, in his threefold capacity, can not. Intellectually, even we can not. Every one must train himself *by a long*, or be trained by masters by *a much shorter* process. Who is it that can write, read, fence, ride, compose an essay, or preach, without previous preparation or practice? Who can make a shoe, or watch, or a steam engine, without training?

The Human Body and its Health.

In conducting training lessons on various portions of THE HUMAN BODY, and their relation to HEALTH, the lessons must not be too minute or complicated at the first, but simply outlines of their various forms and obvious uses, also the natural dependence of one upon the other—words alone may convey to children a sufficient idea of these relations, *without the presentation of any human skeleton.* The minute points of analysis may, and should be left, to subsequent and professional study.

As each child visibly has Head, Arms, Legs, Eyes, Ears, Ankles, Wrists, Hands, etc., and may also have had a lesson on the circulation of juices in plants—without the presentation of a brain, skull, heart, foot, lungs, liver, etc.—the actions of each, and their relation to each other, may be easily pictured out in words by a trained schoolmaster or mistress, assisted by the blackboard.

In order that the young mind may not be tired or disgusted by too consecutive a course of secular lessons, just do as in Bible training—vary the subjects daily. Thus, one lesson on the human body may be taken up weekly, and the remaining four lessons per week as part of the afternoon exercises, on some point of the various subjects of natural and economic science.

At each point of any lesson, not merely on the physiology of the human body, and its relations to health, but, as much as possible, at the close of every lesson on natural or philosophical science, let the wisdom and goodness of the great Creator and Preserver of all things be brought out from the pupils by the trainer, and in such language as is actually within their attainments.

1. HEAD—Bring out from your pupils—The brain as the seat of thought, with all the other obvious parts, such as—eyes, ears, nose, mouth, teeth, skull, etc., with some of their uses. This as a first stage—particular parts during subsequent lessons, and at different times, as may be. If too minute, the children will get tired, and even disgusted with the course.

2. TRUNK OF THE BODY—The most simple outlines of the uses of the spine and backbone, ribs, chest, heart, stomach, bowels, muscles or flesh, skin, nails.

3. LEGS—Picture out the most obvious formation and uses of the limbs above and below the knee—bones, muscles, sinews, skin, knee-joints, ankle-joint, foot,

with heel, toes, etc. The simple outlines of their most apparent uses individually and relatively.

4. ARMS—Single bone above, and double below the elbow—Why? Elbow-joint, wrist—union with hand.

5. HAND—Formation—Bring out, by familiar illustrations, the marvelous wisdom in the formation of the thumb, and different sizes, lengths, and position of the fingers, and the use of the hand as a whole.

6. EYE—The trainer will bring out, during the first lesson, from the children—where placed—in a sort of socket, surrounded by bone, and even partially protected by the nose from injury by a blow—of course more tender than even it; uses of eyebrows, eyelids, eyelashes, general form, having white sides and dark center, called the pupil or apple of the eye, by which we see. The center more easily injured, and therefore partially protected by the white side, where sand or dust is more generally received than in the middle of the eyeball, which is the organic point of sight. Having proceeded thus far with the outlines, a second lesson may be conducted on the various portions of the eye—WISDOM.

7. INTERNAL CONSTRUCTION OF THE EYE—Impression of objects on the retina, vision, optic nerve, etc.

8. EARS—Use, form, nature and use of the parts outside, and could they be better or more easily placed in the head, or elsewhere? Illustrate the wisdom of their position, shape, etc.—then internal construction.

9. HAIR ON HEAD—How grows, how colored—use in all climates.

10. CIRCULATION OF THE BLOOD—in veins and arteries—uses.

11. THE HEART—Its action—vitality—sensitiveness. The mere outlines during the first training lesson. Ample opportunities are afforded during other lessons on the connection of the heart and liver, etc., of bringing out more minute points, and action.

12. LUNGS—Picture out the action of the air on them, and then to whole life of the body—effect on the blood of the decomposition of the air—what portion of the air is repelled—what portion is retained, necessary, and conducive to life and health.

13. THE LIVER—The outlines of its action—blood vessels—and marvelous construction.

14. STOMACH, BOWELS—Deposit for food—digestion necessary for life and health—attention to what we eat and drink necessary—and that the bowels be kept in a proper state, free from extremes.

15. NERVES—Where placed—terminating generally in the brain—feeling of pain and pleasure through them—nerves in fingers, tongue, nose, etc., may be brought out from the children as examples (in their own terms.)

16. NOSE—Nerves—important use of the sense of smelling—familiarly illustrated.

17. TONGUE—Bringing out its connection with the palate, throat, etc., and through the quantity of nerves in this organ, its great importance, in the use of food and drink.

18. THE HUMAN BRAIN—Its position and protection.

19. PERSPIRATION, SENSIBLE AND INSENSIBLE—Through what medium—for what purposes.

20. Picture out the different effects on the human body of too little and too much exercise.

21. The philosophy of washing the skin of the whole body, and its effect on health. Give, or bring out illustrations.

22. The effect on health of sleeping in a small, ill-ventilated room. The philosophy of this, with facts.

23. Picture out whether it is preferable for health to have our bed placed near to the ceiling, or near the floor, or where.

24. Picture out—Why we are apt to catch cold after our hair is cut.

25. The effect of tight M'Intosh or water-proof clothes upon health.

26. Bring out scientifically the effect of cold feet upon health.

27. Whether is white or black woolen cloth the warmer in winter.

28. Illustrate the effect of square and rounded shoulders—also tight-lacing on health.

29. In bathing or washing the body—Picture out the effects of the cold water being applied, in the first instance, to the head or to the feet.

30. In what state should we use a cold bath—cold, warm, relaxed from fatigue, or how—(Too cold or too hot dangerous.)

31. Application of wine to medicinal purposes.

32. THE PHILOSOPHY OF AIRING A ROOM—If by a window—top, bottom, or how.

33. DIGESTION—Effect of eating slowly or quickly.

34. The philosophy of mastication—varied uses of the teeth, names, etc.

35. Picture out the causes and prevention of toothache.

36. Bring out the philosophy of whether an invalid is more apt to catch cold by sitting in front or at one side of the fire—supposing the doors and windows of the room are properly placed.

The trainer will remember that no one organ stands alone, but has others associated with it—which, of course, will be attended to in the progress of the lesson, The hand, with the arm, elbow, wrist, etc., and all with the brain.

If all classes of the community, in town and country, were trained from infancy to a knowledge of Natural Science in common things, as a part of their school education, what additional health and comfort would not mankind experience, especially in towns. The better arrangement of streets and squares—common sewers—chimneys for smoke—ventilation of houses—economy in fuel—"eatables and drinkables"—ventilation and heating of churches and halls for public assemblies. Should architects and overseers even be unacquainted with the natural and proper mode of arranging any particular matter, some of the workmen so trained no doubt would suggest the idea.

Many of the lessons which appear in these Lists might perhaps be better and more easily pictured out with the children if subdivided into two or three parts.

Very many of the minute yet essential practical parts of science, applicable to common life and things, the teacher will only gradually acquire for himself, during the process of picturing out the daily training lessons. Those who have passed through an extended University course of Natural Philosophy confess this to be their experience.

Apparatus, Diagrams, etc.

A trainer, possessing an accurate knowledge of Natural Science, may have an opportunity, in conducting his pupils through these several courses, of rendering the subjects doubly interesting, by means of simple apparatus of no very expensive kind, and of giving much useful instruction illustrative of every-day life. We strongly recommend, therefore, that where funds can be procured, every juvenile and senior school be provided with a few or more of such articles as are enumerated at the close of this chapter; but we consider, at the same time, that these should only be obtained and added to, as the acquirements of the particular school may suggest, lest expense be incurred in the purchase of things which the master might not be able to turn to good account. In such matters very much indeed depends on his own ingenuity in devising interesting and profitable experiments and such as he can render perfectly intelligible to his class, and use also as a basis in explaining the various phenomena of nature—much, likewise, depends upon his dexterity in the various manipulations, and in the improvement and repair of his apparatus. Whilst such appliances, however, are valuable assistants, they are by no means indispensable. On the intelligent and palpable picturing out of the particular subject in words mainly depend the success of the lesson. Devoid of this, apparatus and experiments, as well as objects, may serve for show, but answer little if any practical purpose. Students complain that they can not find books on science and the arts from which they can derive a knowledge of the points required to be pictured out in the daily training lessons, without an extent of reading which they can not accomplish, and a variety of voluminous works which are beyond their reach. They also equally complain that while Bible Commentaries in general give a good doctrinal or practical lesson, yet they do not present the natural picture, or analysis of the emblem, on which the lesson rests, so uniformly presented in the Bible itself.

Our answer is this, bring up the children to your own attainments, whatever these may be, *which the system of communication enables you to do*, and that will be greatly higher than any class of children that may be placed under your charge; and you and they, by this exercise, will mutually acquire a power of analyzing terms, and picturing out ideas, that will render folio volumes less and less necessary. Your own mental powers will get so sharpened up as to analyze more and more easily during the ordinary process of reading such books as are within your reach, which, coupled with the increased power of observation that practice bestows, will enable you to rise to a hight of knowledge, certainly as high as can be demanded in any initiatory, juvenile, or senior elementary school.

INSTITUTIONS FOR THE DEAF AND DUMB.—In institutions for the deaf and dumb, the idea uniformly must accompany the term, otherwise the pupils can not advance one step. Hence the surprising *substantiality* in the knowledge acquired by these interesting unfortunates. It would be well were every master to adopt this natural process with ordinary pupils who are not deprived of such organs of acquiring information.

The Deaf and Dumb Institution of Glasgow, with its accomplished teacher and superintendent, Mr. Anderson, at its head, we would recommend as an excellent model of intellectual, religious and moral training to students; having in view the conducting of ordinary schools, with pupils perfect in all their faculties.

Simple Apparatus for a Senior or Juvenile School.

We now append a brief list of apparatus which may be rendered highly useful. But it must be remembered that the instruction is *not* in the instruments themselves. Many other things too tedious to enumerate might be added, but they will not fail to suggest themselves to a school-trainer as he proceeds :—

A gutta percha tube, twenty-five or thirty feet long, fitted to show how water seeks its level, and how sound can be more readily conducted than through the air.

A glass tumbler, containing about sixteen ounces, and graduated so as to explain liquid weights and measures. It will also serve to illustrate the principle of the Diving-Bell—the pressure of the atmosphere—oxygen as a supporter of combustion, and the amount of it existing in a certain volume of common air, etc., etc.

A Florence flask and spirit lamp, to illustrate the diffusion of heat in a liquid—expansion of water by heat—formation of vapor—process of ebullition—how water rises into a vacuum—the principle of Savery's engine, etc.

A water-hammer, to explain how bodies would fall *in vacuo.*

A glass globe, with a tube attached, and a small aperture below, for illustrating the principle on which a liquid flows from a cask and water from springs, etc., etc.

A glass syphon—a water-pump model—an air syringe and a water syringe.

A few glass tubes of various diameters and lengths, and some hermetically sealed at one end, fitting them to illustrate capillary attraction—the simplest construction of the barometer and thermometer—glass-blowing—the development of electricity by simple means—and the producing of musical notes by means of an ignited jet of hydrogen gas, etc., etc.

A barometer and thermometer consisting simply of the tubes filled with mercury, and a graduated card.

A differential thermometer or pulse-glass—a prism.

A gonigraph—a Gunter's chain—a tape-line—a yard rule.

A horseshoe magnet and a couple of bar magnets.

A magnetic needle balanced on a simple stand.*

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* Such an arrangement is much superior to a regularly fitted Mariner's Compass. It illustrates the principle and use of the Compass, and serves for many other purposes in lessons on Magnetism.

A magnetic and an index needle arranged on opposite sides of a wooden dial, to illustrate the working of the electric telegraph.

An electric machine with Leyden jars, dischargers, insulated stool and the different articles requisite to the performance of a variety of experiments with the machine.

A microscope—an air-pump.

A magic-lantern.

In addition to the preceding articles, and where many of them are not available, diagrams, of which there are now a great variety published at cheap rates, including sections of steam engines, and other machinery, would be of great service. Prints in natural history, animate, and inanimate, are, of course, always useful.

Every trainer should provide himself, at all events, with geological specimens from the particular neighborhood in which he is located—with a variety of dried plants—and with fossils and petrifactions where practicable; and likewise encourage his pupils in making similar collections.

VI. NORMAL AND MODEL SCHOOLS,

OF THE

HOME AND COLONIAL INFANT AND JUVENILE SCHOOL SOCIETY.

The Home and Colonial Infant and Juvenile School Society, under whose auspices the Normal and Model Schools described below are conducted, was founded in 1836, and has since that time educated upwards of two thousand teachers for Infant and Juvenile Schools. The Committee in their first Report, made in February, 1837, state with much force the reasons that suggested the formation of the Society. "The Committee may without fear of contradiction assert, that few situations in life require so much discretion, so much energy, so much tenderness, so much self-control, and love, as that of a teacher of babes; that to guide and govern an infant-school well calls for wisdom to discern, versatility to modify, firmness to persevere, judgment to decide; and they may add that no uneducated or undisciplined mind can supply the incessant care, the watchful diligence, the unwearied patience necessary to manage young children."

One of the first duties of the Committee of the Society was to reduce infant instruction to a system, the necessity for which must have been obvious to all who have observed the trifling desultory way in which infant schools were too often conducted by untrained teachers. For this purpose it was absolutely necessary to found a model infant-school, and also to prepare a set of text-books for the use of teachers. Both these objects were carried out, and the Society having constantly kept in view the necessity of improving their system, now possess an admirable Model Infant School, a Juvenile School for children between six and ten years, in which the plan adpoted with the infants is carried out in its development with those of riper years; and have published a series of text-books for the use of infant-teachers, obviously drawn up with the utmost care, and excellently fitted for the purpose in view.

The establishment is located in Grays Inn Road, and contains accommodation for a Model Infant School for children between the ages of two and six; for a Juvenile Model School for children between the age of six and sixteen, and for sixty persons sent to be trained as teachers. The following documents, published by the Society, exhibit the qualifications of candidates, and the course of instruction pursued in both the Model School, and the Training Department.

Qualifications of Candidates who enter the Institution to be recommended by the Committee to Schools, and the Conditions under which they are admitted.

The Committee receive into their Institution, in Gray's Inn Road, near King's Cross, for a limited period, persons either desirous to enter for the first time upon the work, or those who, having engaged in it, feel their own deficiency, and are anxious for improvement.

In order to prevent disappointment and mistakes, the Committee think it necessary to state what they consider the necessary qualifications of candidates, and the conditions under which they are received.

Qualifications.—1. *Religious and Moral Principles*.—As the primary object of early education is to cultivate religious principles and moral sentiments; to awaken the tender mind to a sense of its evil dispositions and habitual failings, before it is become callous by its daily intercourse with vice; and to lead it to that Saviour who so tenderly received such little ones, and blessed them; to accustom them to trace the hand of their heavenly Father in his works of providence and grace; and to be impressed with the truth that his eye is ever upon them; since such is the *primary object*, an object which if unattempted, early education is valueless; the Committee consider that, in addition to an unimpeachable and moral character, *decided piety* is indispensable, and that without it no teacher can be fitted for the work.

2. *Natural Disposition and Abilities*.—There are certain qualifications of temper looked for in the teacher of young children. The power of sympathy is felt by all, but its effect upon children is almost incalculable; on this account an animated lively manner, tempered by self-possession, and a cheerful good humor, combined with gentle firmness, are very important. To these should be added, that natural fondness for children which leads to a participation in all their little pleasures and pains, and bears patiently with their infirmities and ill humors. It is also particularly necessary that *infant* school teachers should possess an aptitude to teach, the ability of drawing out and directing the powers of children, a quickness of perception to see the effect of the instruction they are giving, and a readiness in availing themselves of accidental circumstances to awaken moral sentiment, or draw out some intellectual faculty.

Acquirements.—It would be desirable that a candidate should be able to read, to write a tolerable hand, to sing, should know the simple rules of arithmetic, be well acquainted with the Word of God, and possess some information in grammar, geography, and natural history.

It will be seen that they think the office of teacher requires certain indispensable natural qualifications and some attainments; and, having this opinion, the Committee would earnestly entreat those interested in the cause of early education to patronize only such persons as their judgment can fully approve, every facility for the improvement of those who devote themselves to the work being now afforded on reasonable terms.

Conditions.—1. The Committee receive candidates in the first instance on probation; and on or before the expiration of a month, their qualifications are reported on by the superintendent in communication with the master of the model school; and if the report be satisfactory, they are allowed to continue; if not, they leave the Institution.

2. All candidates who are to be recommended to schools are to remain twenty-four weeks in the house, and the Committee can not receive any who will not come in for that time. The wives of married candidates remain such time as the Committee decide in each case, if they can not remain—as it is much to be desired that they should—the whole time.

3. The charge is reduced to 7*s*. a week, making £8 8*s*. for the twenty-four weeks, which includes every expense, except washing.

4. Married men are now admitted to be trained as teachers of juvenile schools, without their wives, on the above terms, viz. 7*s*. a week, for twenty-four weeks, finding their own lodgings.

5. Unmarried men are not trained in the Institution.

6. Six young females, not exceeding seventeen years of age, are received as pupil teachers for one, two, or three years, according to their age, at an annual charge of £25, which includes washing and books.

7. The admission of teachers for short periods having been found very inconvenient to the arrangements of the Institution, and attended with comparatively little benefit, the Committee do not receive teachers for less than six weeks, unless they have actually the care of schools, and are, in consequence, unable to remain for that time.

8. The return of teachers to the Institution contributing greatly to their improvement, the Committee agree to allow all teachers who have been regularly trained there to re-enter for one month, at a charge of £1 only, or six weeks for £1 10*s*., whether the money is paid by the teachers or from school funds.

COURSE of INSTRUCTION for the TEACHERS in training at the HOME and COLONIAL INFANT and JUVENILE SCHOOL SOCIETY.

I. SCRIPTURE.—The authenticity of the Bible and the evidences of Christianity; a general view of the different books of the Bible; a daily Scripture text with remarks, chiefly of a practical nature; instruction in the most important doctrines of the Bible to promote real religion, the lessons especially bearing upon the duties and trials of teachers.

II. WRITING AND SPELLING.

III. LANGUAGE.—Grammar; etymology; composition.

IV. NUMBER.—Mental arithmetic; ciphering.

V. FORM.—Lines and angles; superficies; solids.

VI. NATURAL HISTORY.—Mammals; birds; plants.

VII. ELEMENTARY DRAWING.—For the cultivation of taste and invention; as an imitative art.

VIII. VOCAL MUSIC.—Singing; the notation of music.

IX. GEOGRAPHY.—A general view of the world; England and its colonies; Palestine.

X. OBJECTS.—The parts, qualities, and uses of common objects; the essential properties of matter.

XI.—EDUCATIONAL LESSONS.—Principles of education as founded on the nature of children; on the government of children, and moral training; on subjects for lessons; on graduated instruction; on methods of teaching; on writing and giving lessons.

XII. PHYSICAL EXERCISES.

First or Lowest Class.—Six Weeks.

The students in this class are chiefly occupied in receiving instruction for their own improvement, with a view to their future training.

H. M. *Morning.*

8 15. The business of the day is commenced with a text from Scripture, and remarks. This is followed by an educational motto, setting forth some principle or practice of education, on which a few remarks are also made.
8 30. A lesson on Scripture.
9 15 Practice in singing pieces from "Hymns and Poetry."
9 30. A lesson on objects, or the properties of matter.
10 30. Recreation.
10 45. Observing a lesson given to the children in one of the practicing schools by the superintendent of those schools.
11 30. A lesson on language.
12 30. Dismissal.

Afternoon.

2 0. A lesson previously given in the preparatory or practising schools, examined as to its object, and the method of giving it.
3 0. A lesson on number.
4 0. A lesson in singing and the notation of music, or in drawing, for the cultivation of taste and invention.
5 0. Walking exercise on Monday, Wednesday, and Friday.
5 30. Dismissal on Tuesday and Thursday.

Evening.

6 30. Scripture instruction, or analyzing lessons in "Model Lessons."
7 30. Entering heads of lessons in note-books.
9 15. Dismissal.

Saturday.

8 15 A Scripture text and educational motto, as on the previous days.
8 30. Scripture instruction.
9 30. Gymnastics, under a drill-sergeant.
10 30. Scripture instruction.
11 30. Entering heads of lessons in note-books.

Note.—The afternoon of Saturday is a holiday for all the teachers in the Institution.

Second Class.—Twelve Weeks.

As the students now begin what may properly be called their *training*, more time is appropriated to the principles and practice of early education.

H. M. *Morning.*

8 15. A Scripture text and educational motto as to the lowest class.
8 30. A lesson to the upper section of the class in geography, or on the principles and practice of early education, and to the lower section on Scripture.
9 15. A lesson on number or drawing as an imitative art.
10 0. In charge of classes of children in the schools, or a continuation of the lesson on drawing.
10 45. A lesson on the principles and practice of early education.
11 30. Attending and remarking on gallery lessons given by students of the class
12 30. Dismissal.

H. M. *Afternoon.*

2 0. In charge of classes of children in the schools.
2 30. Observing a lesson given to the children by the mistress of the infant school.
3 0. Drawing up sketches of lessons, or analyzing lessons in "Model Lessons," or other exercises of the same kind.
4 0. Notation of music, or practising drawing.
5 0. Walking exercise on Monday, Wednesday, and Friday.

Evening.

6 30. A lesson on Scripture, or natural history.
7 30. Entering notes in daily journals.*
9 15. Dismissal.

Saturday.

8 15. A Scripture text and educational motto, as in the other days of the week.
8 30. A lesson to the upper section of the class on geography, and to the lower section on Scripture.
9 30. Gymnastics.
10 30. A lesson on Scripture.
11 30. Entering notes in daily journals.

Third Class.—Six Weeks.

The previous instruction and practice of the students is now brought to bear upon the government of large numbers of children, and the time is chiefly employed as assistants in the schools, or in taking the entire management of one of the small practicing schools. When they are not so employed, their time is occupied as follows, viz. :

H. M. *Morning.*

8 15. A Scripture text and educational motto.
8 30. A lesson on the principles and practice of early education, or on geography.
9 15. In the schools employed as general assistants.
12 30. Dismissal.

Afternoon.

2 0. In the schools as before.
5 0. Dismissal.

Evening.

6 30. A lesson on natural history or Scripture.
7 30. Entering notes in daily journals.
9 15. Dismissal.

Saturday.

8 15. A Scripture text and educational motto.
8 30. A lesson on geography.
9 30. Gymnastics.
10 30. A Scripture lesson.
11 30. Entering notes in daily journals.

Time allotted to each subject of study.

The following table exhibits the time weekly allotted in the different classes to each subject of study, and also the average weekly time.

—	First or Lowest Class.		Second Class.				Third Class.		Av'rage Weekly	
			First Period.		Second Period.					
	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
I. General Improvement :—Scripture	8	30	7	0	7	0	3	45	6	34
Writing and spelling, reports of lessons, &c.	10	30	12	30	12	30	10	30	11	30
Language	6	15	2	15	0	0	0	0	2	7
Number and form	5	0	0	0	2	15	0	0	1	49
Natural history	0	0	3	0	3	0	3	0	2	15
Geography, including the Holy Land	0	0	1	0	1	15	2	30	1	11
Objects	6	15	0	0	0	0	0	0	1	34
Vocal music	4	15	3	0	3	0	0	0	2	34
Drawing	3	0	5	0	5	0	0	0	3	15
Gymnastics and walking exercise	1	0	1	0	1	0	1	0	1	0
II. Lessons on the principles and practice of early education	11	15	12	30	12	45	3	0	9	45
III. Practice in the Schools :—Taking charge of classes, and afterwards of galleries of children	0	0	4	0	4	0	0	0	2	0
Giving an opinion on the lessons of other teachers, Giving lessons publicly	0	0	4	30	4	30	0	0	2	15
Attending as assistants in the schools	0	0	0	0	0	0	32	15	0	0
Having the sole charge of schools under inspection	0	0	0	0	0	0	0	0	10	13
Recapitulation :—General improvement	44	45	35	0	34	45	20	45	34	0
Principles and practice of education	11	15	12	30	12	45	3	0	9	45
School practice	0	0	8	30	8	30	32	15	12	15
Total number of hours weekly	56	0	56	0	56	0	56	0	56	0

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* Much time and attention are given to these journals, both by the students and those who instruct them, as well as by the ladies of the Committee, to whom they are sent for examination.

It is deemed unnecessary to give any syllabus of the courses of ordinary instruction, but the following syllabus of lessons on the principles and practice of early education, is annexed, as it shows what is in some degree peculiar to this institution.

First Course.

It is a distinctive feature at this course that the ideas are chiefly gained from examples presented to the students. The lessons are mainly explanatory of the examples.

I. Lesson on the daily routine of employment in the Institution. The instructions by the committee for students. General rules and regulations.

II. Examination and analysis of lessons from "Model Lessons," viz.:—

Lessons on objects, Part I. p. 51–93.
" color, Part I. p. 149–157.
" animals, Part I. p. 160–165.
" number, Part I. p. 103–140.
Scripture Lessons, Part III. p. 1–28.

III. Drawing out sketches of lessons on various subjects, after the example of those analyzed.

I.—*On Objects.*

1. On a shell or leaf,	according to the model of a	lesson on a	feather.
2. Copper or iron	"	"	lead.
3. Tea or sealing wax . . .	"	"	loaf sugar.
4. Vinegar or ink	"	"	milk
5. Recapitulation.			
6. Parchment	"	"	paper.
7. Cloth	"	"	leather.
8. Pipeclay	"	"	chalk.
9. Wood or rice	"	"	coal.
10. Recapitulation.			
11. A candle or hammer . .	"	"	lead.
12. A turnip or acorn . . .	"	"	a rose-leaf.
13. An egg	"	"	honeycomb.
14. A bird or bee	"	"	a butterfly.
15. Recapitulation.			

II.—*On Animals.*

1. Sheep . model—hare. 2. Goat . model—cow.

III.—*On Color.*

1. The color blue . model—red. 2. Color yellow . model—green.

IV. Lessons in which "Practical Remarks" form the text-book.

V. On the art of questioning children, and on the different methods of giving lessons.

The students afterwards draw out lessons in full, according to models given.

VI. On the best method of drawing out children's observation upon the objects around them, and upon the circumstances in which they are placed, and on fixing the knowledge so gained in the mind.

VII. The characteristics of young children that must be kept in view and acted upon, in order to secure their attention, to interest them in their lessons; and to gain ascendency over them.

1. Love of activity.
2. Love of imitation.
3. Curiosity, or love of knowledge.
4. Susceptibility to kindness and sympathy.
5. Deficiency in the power of attention.
6. The love of frequent change.
7. The force of early association.
8. Disposition to repeat the means by which they have once attained their ends.

VIII. On the senses, and the use to be made of them in early education.

IX. The gallery lessons given to the children of the preparatory or practicing schools, as to the subjects, the manner of treating them, and their bearing upon the education of the children.

First Preparatory School.—1. Form—1st step.
2. Color—1st and 2nd step.
3. Size—1st step.
4. Actions—1st step.
5. Human body—1st step.
6. Objects—1st step.
7. Number—1st step.
8. Religious instruction—1st step.
9. Sounds—1st step.

Second Preparatory School.—1. Form—2nd step.
2. Color—3rd and 4th step.
3. Size—2nd step.
4. Actions—2nd step.
5. Place—1st step.
6. Objects—2nd step.
7. Animals—2nd step.
8. Number—2nd and 3rd step.
9. Moral instruction—2nd step.
10. Religious instruction—2nd step.
11. Sounds—2nd step.

X. A general view of the different subjects of instruction in the preparatory schools, with a view to lead the students to draw from them principles and plans of teaching.

Second Course.

I. Instructions on familiar or conversational lessons, and on the subjects chosen for these lessons, in the preparatory schools.

II. Analysis of lessons in "Model Lessons."

1. Form, Part II. p. 150–226.
2. The human body, Part I. p. 24–50.
3. A flower, Part II. p. 65–76.
4. Scripture lessons, Part II. p. 1–21.
5. Bible examination, Part II. p. 125–132.

III. Drawing up sketches of lessons in writing, according to a given model, first, singly, and then in a series or course.

Objects.

1. On sugar, after the model of the lesson on bread.
2. Spices and liquids " " corns.
3. Leather and silk " " cotton.

Animals.

1. On a tiger . . . Model—A pheasant
2. The elephant and the cat . " A pig.
3. Different kinds of teeth . " Different kinds of feet of animals.
4. Comparison of parts of a quadruped and bird. . . " Hand and foot.

Scripture Illustrations.

1. The sun and the dew. Model—The rainbow.
2. Sheep—lion " The vine.
3. Fishermen of Galilee " The shepherds of Judæa.

Scripture Narratives.

1. On the Prodigal Son, and on } Model—Joseph's forgiveness
2. The Brazen Serpent . . } of his brethren.

3. David's Veneration for his King " Solomon's respect for his mother.
4. The Nobleman's Son. " Mark x. 46 to 52.

In Series or Course.

1. A variety of sketches, after the model of the lesson on water.
2. A series of sketches on a given subject " on prayer, &c., as in "Model Lessons," Part III. p. 24, &c.
3. A graduated series of sketches on the same subject. " on a straw, a cat, &c.
4. On the subjects appointed for lessons weekly at the different galleries.

IV. Writing out lessons in full on specified subjects—As

1. To develop the idea of Inodorous.
2. " " Pliable.
3. " " Tasteless.
4. " " Soluble and fusible.
5. " " Semitransparent.
6. " " Elastic.
7. " " Aromatic.
8. " " Natural and artificial.
9. " " Lesson on an elephant.
10. " " Comparison of the cow and pig.
11. " " A piece of poetry.
12. " " The rainbow.
13. " " The addition or subtraction of 8.
14. " " Explanation of the terms—sum, remainder, product, quotient.
15. " " Substance of lesson X. in Reiner's "Lessons on Form."
16. " " On the illustration of the general truth, "God is angry with the wicked every day."

Note.—The number of sketches and lessons which the students are enabled to draw out during their training of course depends upon their ability and upon the previous education they have received. Some of these lessons are examined publicly, that their excellencies or errors may be pointed out for the improvement of the class, the name of the writer being withheld.

V.—*Gallery Lessons.*—With reference to the Gallery Lessons, instructions are given on the following points:—

1. The sketch.
2. The subject-matter.
3. The summary.
4. The application of a moral subject.
5. On maintaining order and interest.
6. The exercise of the minds of the children, and the knowledge gained.
7. The manner of the teacher.
8. Voice—pronunciation.
9. Importance of attention to the whole gallery of children.
10. On the use to be made of incidental circumstances.
11. On the questions to the children.
12. Mechanical plans.

VI.—On the subjects taught in the schools, their suitability to the children, and the mode of treating them:—

1. Color.
2. Form.
3. Size.
4. Weight.
5. Physical actions and operations.

6. Number.
7. Place, as preparatory to geography.
8. Sounds, as preparatory to singing and the notation of music.
9. Objects, including models of common utensils.
10. Teaching by pictures of common objects, and drawing objects before children.
11. The human body.
12. Animals.
13. Moral instruction.
14. Religious instruction.
15. Teaching pieces of poetry.
16. Drawing and writing.
17. Reading and spelling.
18. Language, including composition, grammar, and the explanation of words.
19. Number, form and language, as the elements of intellectual instruction.
20. Summary of the principles learnt in considering the subjects of lessons for infants.
21. Drawing out sketches of the different methods of giving lessons, and the uses to be made of them, showing which are bad and which are good, and those suitable to different subjects.

VII.—Miscellaneous:—

1. A course of educational mottoes.
2. On intuitive knowledge and early development.
3. On principles and plans of education.
4. Anecdotes of occurrences in the school, brought forward with a view to form right principles of moral training and intellectual development.
5. On the play-ground, especially in reference to its influence in the intellectual and moral training of children.

Third Course.

I.—The practice of the school-room, and the principles on which it should be regulated:—

The school-room and its apparatus, including library, collection of objects &c.
The opening and general arrangements of a school.
Attendance, and the best method of raising and filling a school.
Admission payment, and first treatment of children.
General order and quietness.
The physical state of the children, health, cleanliness, neatness.
The exercises of the school-room and play-ground.
The division of time, and the subjects of lessons in a school.
Modes of leading elder scholars to work, independently of the master's direct teaching.
The government of a school with respect to its spirit and plans.
The influence of numbers in teaching and moral training.
Rewards, punishments, emulation.
Assistance, including paid assistants and monitors; the monitorial system.
The defects and advantages of the individual, and simultaneous methods of instruction, and the use of the ellipses.
Examinations by the teacher, for parents and for subscribers.
Holidays.

II.—Points respecting teachers:—

The intellectual and moral qualifications of a teacher, and the circumstances which affect him in his labors.
The conduct of teachers to parents, committees, inspectors, and the public.
The means by which teachers may carry on their own improvement.

III.—On the mental and moral constitution of children with reference to the principles on which education should be based:—

Mental.

The various operations of the mind, intellectual and moral, and the wisdom and goodness of God which they display.

The dependence of one intellectual faculty upon another, and the necessity for the orderly and progressive development of the whole.

The intellectual diversities of children, and the method of treating each variety of character.

Moral.

The importance of moral training on a religious basis, showing how the Bible should be our guide.

Diversities in the moral character of children, and the method of treating each, viz.,

Attachments of children.
Anger, and the treatment of passionate children.
Quarrelsome children.
Children disposed to injure and destroy.
Cunning children.
Covetous children.
Fear, and its use and abuse, as a means of discipline with children.
Firmness, and its tendency to become obstinacy.
The love of distinction and applause.
The cultivation of benevolence.
The sense of right and wrong.
Respect.
Obedience.

IV.—General truths respecting the operations of the minds and moral feelings, and the uses to be made of them in the education of children.

The Graduated Course of Instruction pursued in the Model Schools.

I. Religious Instruction.—*1st step: Moral Impressions.*—The children of this gallery are very young, direct religious instruction can scarcely be attempted at first, but their moral sense is to be cultivated, and moral habits formed. For instance, little acts of obedience are to be required from them—their conduct towards each other regulated, and little conversational lessons are to be given upon the kindness of their parents and teachers, with a view to develop the feeling of love, and to instruct them in their duties.

2nd step: First Ideas of God.—The object, as the children advance, is to produce the first impressions of their Heavenly Father—to lead them to feel somewhat of his power from its manifestation in those works of his with which they are familiar; and somewhat of his benevolence, by comparing it with the love shown them by their parents and friends.

3rd step: A Scripture Print.—The story to be gathered from the picture, by directing the attention of the children to it, and by questioning them. A portion of the Scripture should be given, that the children may connect the narrative with the Bible, and receive it as Divine instruction. The children should also be encouraged to make their remarks, by which the teacher may ascertain how far their ideas are correct. The object of the lesson should be to make a religious and moral impression.

4th step: Scripture Narratives.—The incidents or characters should be chose with a view to inculcate some important truth or influential precept. Elliptical teaching should be introduced to help the children to receive the story as a whole, and to sum up the lesson. In giving these lessons, the story itself should be either read from the Bible, or partly read and partly narrated, and pictures only used occasionally, to illustrate and throw interest into the subject. Teachers ought well to consider the different positions that pictures should occupy in the different stages of instruction.

5th step: Scripture Illustrations of Doctrines and Precepts.—Narratives, chosen with a view to inculcate some of the most simple and fundamental doctrines of Christianity. For instance, sin, its nature, introduction into the world, its consequences, and the remedy provided for it in the sacrifice of the Saviour. As the children advance, some lessons to be given to illustrate the natural history of the Bible.

NOTE.—In the first or early lessons on Scripture narratives, the truth or precept should be drawn from the story by the children. In the later lessons, the precept or religious truth or duty may be stated as the subject of the lesson, and the children required to discover what Scripture narratives illustrate the truth or precept they are considering.

6th step.—A course from the Bible, or a course on the Natural History of the Bible. On Monday, Scripture geography.

II. OBJECTS.—*1st step.*—Distinguishing or naming three or four common objects, and telling their uses; or distinguishing and naming the parts of common objects, and stating their uses.

2nd step.—*One Object* chosen that exhibits in a remarkable degree some particular quality, that the idea of that quality may be developed. *Another*, having distinct parts, which the children are to discover, and of which they are told the names.

3rd step: One Object.—The children to find out the qualities that can be discovered by the senses alone; also to distinguish and name the parts.

4th step: Miscellaneous Objects, Metals, Earths, Liquids, &c. One Object.—The children to extend their observations to qualities, beyond those which are immediately discoverable by the senses. *A little simple information* to be given at this stage on the natural history or manufacture of the object, after the children's observation has been called out.

5th step: Several objects.—The children to compare them, and point out their points of resemblance and difference.

III. TOYS.—Model toys of kitchen utensils, common carpenters' tools, &c., naming them, and telling or showing their uses.

IV. PICTURES.—*1st step.*—Groups of objects or single figures,—naming and talking about them.

2nd step.—Part of the lesson to be on the recollection of a picture used in a former lesson—part on a picture of common objects.

V. HUMAN BODY.—*1st step.*—Distinguishing the principal parts of the human body, the teacher naming them; or the children exercising any part of the body as directed. This lesson should be accompanied with considerable action, to animate the children.

2nd step.—Distinguishing the secondary parts of the body. This lesson to be extended to the parts of the principal parts of the human body, the teacher continuing to name them: a good deal of action still to be used.

3rd step.—Distinguishing the parts of the principal parts of the human body—the children naming them, and telling their uses.

VI. FORM.—*1st step.*—Distinguishing the patterns of shapes for the purpose of developing the idea of form—the children to distinguish them—no names being used.

2nd step.—The children continuing to select the patterns of shapes, according to the one shown; when perfect in this, they may select all those that have the same number and kind of edges, and the same number of corners.

3rd step.—The children to determine the number of sides and corners in planes whether the sides are straight or curved; also to learn the names of the planes.

4th step.—A solid is shown, and the children select all those that resemble it in some points; the names of the solids are not to be given. The letters of the alphabet to be examined, and the number and direction of their lines to be determined.

5th step.—To determine the length of different measures, learn their names, and practice the introductory lessons on Form in "Model Lessons," part II.

6th step.—The course of lessons on Form in "Model Lessons," part II.

VII. ANIMALS.—*1st step: A Domestic Animal.*—A picture or a stuffed specimen may be shown. The children to be encouraged in talking about it, to say what they observe or know, without reference to any arrangement, the aim of the instruction being to elicit observation, to cultivate the power of expression, and especially to encourage humane and benevolent feelings towards the inferior creation. At this stage it is well sometimes to allow the children themselves to propose the animal that they are to talk about.

2nd step: A Domestic Animal.—Children to name its parts, color, size, and appearance. An attempt should be made in this stage, at a little arrangement of the subject, but it should not be too rigidly required. One principal object should be to encourage humane and benevolent feelings towards the lower animals.

3rd step: A Domestic Animal.—Children to describe the uses of domestic animals, their different actions, and with what limb they perform any action, the sounds they make, our duties with respect to them, &c. These alternate weekly with

4th step: Animals and Human Body.—The children to describe where the different parts of the human body are situated, and to compare those parts with the parts of animals, pointing out in what they are alike, in what they differ, and how fitted to the habits and wants of man, or of the different animals. See course in "Model Lessons," part I.

5th step: Wild Animals.—Children to tell their parts, color, size, and appearance; to point out how particularly distinguished, and to learn something of their habits and residence; being led to perceive how the animal is fitted by the Almighty for its habits and locality.

VIII. PLANTS.—*1st step.*—Naming the parts of plants, and telling their uses to man as food, &c.

2nd step.—See course in "Model Lessons," part II.

IX. NUMBER.—*1st step: First Idea of Number.*—The idea of the numbers from 1 to 5 or 6, to be developed by the use of the ball frame and miscellaneous objects, as exemplified in Reiner's introductory lesson, "Lessons on Number," reprinted, by permission of the author, for the use of the teachers of the institution, in "Papers on Arithemetic;" to which may be added many additional exercises, such as those in the 1st and 2nd sections of "Arithmetic for young Children," &c.

2nd step: First Idea of Number.—The idea of the numbers from 6 to 10 to be developed by the use of the ball frame, as before; also the first and second exercises in "Model Lessons," part i., to be used as directed in that work.

3rd step: Addition and Subtraction.—The remaining exercase under section I., also the whole of the exercises on subtraction in the same work.

4th step.—The more difficult exercises in "Model Lessons," part i., &c., accompanied by selected exercises from "Arithmetic for Children."

5th step: The Four Simple Rules.—Exercises on the four simple rules, in number from 10 to 100, from "Papers on Arithmetic," and "Lessons on Number;" also simple explanations of the rules, leading the children to think of the operation they have been performing; also, by numerous exercises, to lead them to perceive some of the general properties of number.

X. COLOR.—*1st step.*—Selecting colors according to a pattern shown, and arranging colors, no names being used.

2nd step.—Learning the names of the different colors, and selecting them when called for by name.

3rd step.—Distinguishing and naming colors and shades of colors, and producing examples from surrounding objects; with exercises on beads of different colors.

4th step.—Distinguishing and naming shades of color, and producing examples from memory.

5th step.—The lessons in this step to be given on a specific color; the children are also to learn from seeing them mixed, how the secondary colors are produced from the primary.

XI. DRAWING.—From the age of the juveniles, and also from drawing not coming under the head of "Gallery Lessons," the following course of exercises cannot be so well arranged into stages for the various schools. It is also thought desirable that one of the courses of lessons should be presented in a continuous form, that the extent and variety of exercise which they are intended to give to the mind may be observed. The courses form two series of exercises, commenced in the infant-school, and completed in the juvenile-school.

First Series—To Exercise the Eye alone.

Measuring relatively.—Let the children determine the relative length of lines drawn in the same direction on the slate, i. e., which is longest, which is shortest, &c. Whenever there is a difference of opinion, prove who is correct, by measuring.

Determine the relative length of lines drawn in different directions on the slate.

Determine the relative distances between dots made on the slate.

Determine the relative difference of the distances between different parallel lines.

Determine the relative size of angles.

Determine the relative degree of inclination of lines from the perpendicular—first, by comparing them with a perpendicular line, drawn on another part of the slate—and afterwards without this assistance.

The same exercise with horizontal lines.

Determine the relative size of circles, and then of portions of circles.

Children called out to divide straight lines, drawn in different directions, into 2, 3, 4, &c., equal or given parts, the others to state their opinions as to the correctness with which the operation has been done.

The above exercise repeated with curved lines in different directions.

NOTE.—Several of the above exercises may be applied to the lengths, &c., of the objects and pictures in the room.

Measuring by current Standards.—The teacher to give the children the idea of an inch, nail, quarter of a yard, foot, half a yard, and yard, which, at first, should be drawn in a conspicuous place, for the whole class to see.

To decide the length of lines.—First practice the children upon the inch, then upon the nail, and so on up to the yard; continually referring to the standard measures.

NOTE.—These exercises should be continued until the eye can decide with tolerable accuracy.

Determining the length of lines combined in various rectilinear geometrical figures.

Determining the circumference or girth of various objects.

Determining distances of greater extent, such as the floor and walls of the room, the play-ground, &c., &c.

Measuring by any given Standard.—Measuring sizes, heights, lengths, &c., by any given standard.

How often a given standard will occupy any given space, with respect to superficies.

Second Series—To Exercise both the Eye and Hand.

Before commencing these exercises, it would be advisable to give the children instruction (in a class around the large slate) with regard to the manner of holding the pencil, the position of the hand in drawing lines in various directions. This will be found to diminish the labor of attending to each individual separately. Instruction as to the position of the body may be left till the children are placed at the desks.

NOTE.—The standard measures, used previously, should be painted on the walls, or placed conspicuously before the class in some manner, both horizontally and perpendicularly, in order to accustom the children to them.

The children to practice drawing straight lines in different directions, gradually increasing them in length. First perpendicular, second horizontal, third right oblique, fourth left oblique.

To draw lines of given lengths and directions.

To divide the lines they draw into given parts.

To draw curved lines in different directions, gradually increasing in size.

To try how many angles they can make with 2, 3, 4, &c., lines.

To try what they can make of 2, 3, 4, &c., curved lines. Then proceeding to copies; first copying those formed of straight lines, then those of curved lines.

To draw from copies.

NOTE.—In the course of forming figures out of straight and curved lines, the children should be taught to make the letters of the alphabet.

XII. GEOGRAPHY.—*1st step.*—The course consists of the following series of lessons: 1. The cardinal points. 2. The semi-cardinal points. 3. The necessity of having fixed points. 4. The relative position of objects. 5. The boundaries of the school-room. 6. The boundaries of the play-ground. 7. The relative distances of the parts and objects of the school-room. 8. The relative distances of the parts and furniture of the school-room marked on a map, drawn on the large slate or black board with chalk, before the children. 9. The scale of a map. 10. The relative positions and distances of different places on a map of the neighborhood. 11. The map of England. 12. The map of the Holy Land.

SPECIMEN OF EXAMINATION PAPERS

ON

SCHOOL MANAGEMENT AND THE ART OF TEACHING.

At the risk of repeating some of the leading principles set forth in the foregoing "*Course of Instruction*," we give below a *Syllabus of Lessons on Education* given in the same institution to students in training for teachers in the schools of the Home and Colonial Infant and Juvenile School Society.

Extracts from Syllabus of Lessons on Education, given to Students in Training at the Home and Colonial School Society.

I.—The Principles of Education as set forth by Pestalozzi.

1. *On the Aim proposed by Pestalozzi in Education.*—This the first point to be considered—Mistakes with respect to—The true aim of education as it respects knowledge—intellectual and moral character—Social relations—Moral and religious duties—Principles on which based—The proper work of the Teacher reduced—Results.

2. *The Influence of a good Education.*—The little that has been done by education as hitherto pursued—Causes of this—Influence of a good education on thought, feeling, sentiment, opinion, &c.—Different senses in which the child may be said to be father of the man—Influence of education established from examples—Necessity of faith in this principle on the part of the Teacher—Incidental and systematic education, difference between—The Teacher to form a good intellectual and moral atmosphere round the child—Means of effecting this.

3. *Education, Organic.*—Organs and organized bodies considered to illustrate this—Difference between growth from within carried on by organic action or development, and increase from without effected by accretion—Application—Difference between ordinary elementary education and elementary education on the system of Pestalozzi—Deductions as to liberty, activity, and power—The application, especially as to liberty, in the school-room and play-ground.

4. *On Education being an entire Work.*—Pestalozzi's motto, "Education has to work on the head, the hand, and the heart"—Dugald Stewart on the same point—Pestalozzi introduced the principle into popular education—The perfection to be aimed at in education, moral,—Mistakes that have been made as to Pestalozzi's practice—Pestalozzi's estimate of the relative importance of the different elements of a child's nature, and method of dealing with each.

5. *Education should aim at the Gradual and Progressive Development of the Faculties.*—Examples of graduated and progressive instruction as—Proceeding from realities to signs, first natural, then artificial—From particular facts to general truths—From what is simple to what is complex—From the exercise of observation to the exercise of conception—From the conception of material things to abstract ideas, &c.—The first step—to find something analogous in the experience of the child to the subject presented, thus proceeding from the known to the unknown—The child to be firm on one step before proceeding to the next—The extent to which graduation should be carried—Extremes to be avoided—The graduations not to be too minute to prevent healthy exercise.

6. *Education should be Harmonious.*—The cultivation of all the faculties, not singly and apart, but simultaneously.

7. *The Character or Spirit of Education.*—"Not to teach religion alone but all things religiously"—Illustration drawn from the circulation of the blood in the body—Exemplification of this spirit in the instruction, general management, and discipline of the school—Results to be expected.

8. *Early Education chiefly by Intuition.*—What is meant by intuition—Examples—Value of what is learned from experience—Early education to lead to and prepare the mind for books—When commenced with books the mind often loaded with words conveying no definite meaning to children—The powers of the mind in consequence often cramped—Intuitive teaching one of the leading features of Pestalozzi's system—Connection between intuitive and logical knowledge—The assistance the former gives to

the latter—Difference between the instruction of infants and juveniles, the one mainly intuitive, the other principally logical.

9. *Difference between Education and Instruction.*—An idea put forth strongly by Pestalozzi—Origin and application of the words—Points of difference—Instruction communicated (though the subject may be clearly explained) does not produce the same good effect, as instruction employed as a means of mental discipline—The proper bearing of this distinction on the lessons of the Teacher.

10. *Education of a Mixed Character.*—What this means—Principle on which based—Examples—Education should be practical as well as preceptive—Illustrated by the Teacher as well as enforced upon the child—Applied individually as well as collectively—Direct instruction to be followed by study—Public education united with private and domestic—Children to be carried rapidly over some subjects to develop power and energy,—slowly over others to give habits of minute investigation—Subjects of instruction enumerated.

11. *Systems of Education.*—Application of the word system—Views generally taken of systems of education—Characteristics of the chief popular systems, especially those of Stow and Pestalozzi—The one teaching chiefly through words "picturing out," as it is called, the other by things and words in their appropriate place—The specious boast of selecting what is good from every system—The motto, "That is the best system which brings the powers of the mind under the best discipline," a test—The system of Pestalozzi founded on principles and adapted to the human mind, consequently a philosophical system, might be called the natural system—Different value of *principles* and *plans*—Illustration of this shown in the different kinds of value appertaining to wheat and bread—Advantage of principles in every thing—Many Teachers appreciate plans only—Principles the only true and safe guide.

12. *Summary of the leading Principles of Pestalozzi.*

1. Education ought to be essentially religious and moral.

2. Education ought to be essentially organic and complete, and not mechanical, superficial, and partial, it should penetrate and regulate the entire being.

3. Education ought to be free and natural instead of being cramped, confined, servile—The child should have sufficient liberty to manifest decidedly his individual character.

4. Education ought to be harmonious in all its parts—It should be so carried on that all the natural faculties, and all the acquired knowledge agree and harmonize.

5. Education should be based on intuition, on a clear and distinct perception of the subject to be learned.

6. Education should be gradual and progressive, united in all parts, like a chain, forming a continued series without gaps.

7. Education should be of a mixed character, uniting the private and the public; it should cultivate at the same time the social and domestic spirit.

8. Education should be synthetical—every thing taught should be first reduced into its elements by the Teacher.

9. Education should be practical, drawing its means of development from the actual circumstances of life.

II.—The Art of Teaching.

1.—INTRODUCTORY COURSE.

1. *Instructions as to the Mode of giving Familiar or Conversational Lessons*, and on the subjects chosen for such lessons in the Practicing Schools of the Institution.

2. *The Examination and Analysis of Lessons* selected from "*Model Lessons*," a work published by the Society.

3. *Drawing out Sketches of Lessons on various Subjects*, taking those before analyzed as examples.

4. *Different Methods of giving Lessons Compared*, with a view to point out which are bad and which good, also the methods suitable to different subjects.

5. *On the Art of Questioning.*—The importance of understanding this art—One of the plans of teaching much used by Pestalozzi—Different objects in view in questioning—Questions which only exercise memory—Advantages of questioning—Rules to be observed and mistakes avoided—Examples of different kinds of questions—Of a train of questions—Practice in the art of questioning.

2.—ON GALLERY INSTRUCTION.

1. *Introduction.*—The nature and importance of gallery instruction—Children brought under the direct influence of the Teacher—Facility thus afforded for securing order, attention, progress, moral training—Value in economizing labor—The principle of success to be found in the power of the sympathy of numbers—Extent to which Teachers should avail themselves of this sympathy—Its abuses—Duties connected with gallery instruction.

2. *Preparation of Lessons.*—Directions for making a good sketch—Advantages of a

full sketch—Importance of determining beforehand the chief points of the lesson, and the method of working them out.

3. *The Subject matter.*—Importance of attention to quantity and quality—Rules by which to be guided, and the principles upon which based—Advantage of clear and natural arrangement—The ideas to be thoroughly worked into the minds of the children—sufficient but not too much new matter to be presented properly, it being almost "as important how children learn as what they learn."

4. *The Summary.*—Definition of a summary—The qualities of a good summary—Its uses—Various ways of making a summary—Advantage of its being well committed to memory or written out by the children.

5. *Application of Moral and Religious Lessons.*—The nature of this application explained—The importance of *applying* moral and religious instruction—Of requiring the children to make the application themselves—What is meant by impression—Causes of failure in making religious instruction impressive.

6. *Order, Interest, and Attention.*—The importance of order—Causes of disorder—Various means of obtaining and regaining order—Difference between order and stiffness or restraint—Importance of exciting interest—Means of doing it—Difference between healthful activity of mind and excitement—Attention how to be obtained and kept up.

7. *The Exercise to be given to the Minds of Children.*—Importance of producing activity of the mind—Amount of mental exercise to be given—Means of giving it—Teachers tell too much—Ways of doing so, and causes.

8. *The Manner of the Teacher.*—Importance of manner, especially with young children—Different kinds of manner—How each affects children—The power of a decided manner—Its abuse—The effects of the voice in exciting different feelings—Tones of voice suited to different subjects.

9. *Attention to the whole Gallery.*—Temptations to attend to a few children only—Effects—Means of keeping up general attention—Difficulties where a gallery is unhappily composed of children of different degrees of attainment—How in part to be obviated.

10. *The Use to be made of Incidental Circumstances, especially in Moral Training.*—Enumeration of those which most commonly occur in a gallery, and also in the playground—The influence that the notice of incidental circumstances has on the children, as well in an intellectual as in a moral point of view—Cautions against the abuse of this practice.

11. *On the Language given to Children.*—Relation of language to ideas—Right time of supplying language—Necessity for clearness and simplicity—Fine words and technical terms to be avoided.

3.—ON CLASS INSTRUCTION.

Use of class lessons—Mechanical arrangements—Apparatus—Amount of class instruction to be given—Subjects.

4.—ON THE SUBJECTS OF INSTRUCTION, ETC., PROPER FOR AN INFANT SCHOOL.

1. *On the Principles that should Regulate.*—The choice of subjects should be suitable to the children's age—Elementary character of the subjects—Necessity of having a general design in each course of lessons, as well as a particular design in each lesson—The importance of the instruction being of a graduated character—Of its commencing at the right starting point—Subjects should be varied—The reason and principles upon which this is founded.

2· *The subject stated.*—Color—Object in view in lessons on color, and their suitableness to this object and to infant minds—The graduated course of these lessons, with reference to the work published by the Society, entitled, "*Graduated course of Instruction for Infant Schools and Nurseries*"—Methods to be adopted in giving lessons—Principles to be deduced.

3. The other subjects treated in a similar manner—Form—Size—Weight—Place—Number—Physical actions and employments—Sounds, including practice in singing—Common objects—Pictures of common objects—Drawing before children—Human body—Animals—Plants—Language—Reading, Spelling, Writing—Pieces of poetry—Moral instruction—Religious instruction.

5.—ON THE SUBJECTS OF INSTRUCTION, ETC., PROPER FOR A JUVENILE SCHOOL.

1. *Points in which a Juvenile School differs from an Infant School.*—As to its organization—Division of time—Classification of children—Home-work—Employment of Pupil-Teachers—Subjects of instruction calling the reasoning powers more into exercise—Method of giving such subjects a more continuous and systematic character—Mode of treating the children—Morally, throwing them more upon their own responsibility—Intellectually, making them more independent of their Teachers, and more accustomed to gain information and knowledge from books, teaching them early "to learn how to learn," *i. e.*, to be self-educators.

III.—The School-room, as to its Arrangement and Management.

1. *The School-room.*—Influence of the appearance of the school-room on the children's character—Its effect on visitors—Desks and their arrangement—Cleaning—Ventilation—Temperature—Order and decoration—Apparatus—What it is—Its right appreciation—Care to be taken of it.

2. *The Opening of a New School, &c.*—Preliminary steps to be taken—Difficulties—Spirit in which to commence—Plans to be adopted—Admission of children—Register and other books—Payments.

3. *The Organization of a School.*—What it means—Importance of good organization—Plans to be adopted—Treatment of new scholars—Points requiring attention, as time-tables, programmes, distribution of work, &c.

4. *Division or Classification of the Children.*—Importance of classification of the children of an Infant School—Too much neglected hitherto—The advantage seen in the Model Schools of the Institution—Arrangement in galleries and classes—Principle upon which this is made, of proficiency, not age or size—The difficulties of Infant Schools, when Teachers have no assistance.

5. *Regular and punctual Attendance, and the means of insuring it.*—Importance of the subject—Different causes of irregular attendance—Method of dealing with each—Means for securing attendance, supplying a good education, having well defined and positive rules—Quarterly pre-payment—Punctual attendance—How much depending on the Teacher's own habits—Closing the door at a fixed hour—Visiting the parents, &c.

6. *The Dinner hour and arrangements for it.*—The Teacher's presence necessary—Its inconvenience considered—The social and moral effects of superintending children at dinner.

7. *The Physical State of the Children.*—Teacher's duties with respect to health, cleanliness, and neatness—Duties of parents not to be too much interferred with—Means of cultivating cleanliness, neatness, &c.—The effects.

8. *The Play-ground.*—Physical education—Its importance—Provision to be made for its connection with a school—Advantages of the play-ground in reference to moral instruction and moral training—Its bearing on the health and comfort of the Teacher—Their objections answered—Tact required in the superintendence of the play-ground—Apparatus, games, &c.—Time to be allotted to exercise—Objections of parents met.

9. *Monitors, Pupil-Teachers, and Paid-Assistants.*—Monitors, these "*necessary evils,*" as they have been called, fast disappearing—Still often found useful—Relative value of Monitors and Pupil-Teachers, and principle on which to be ascertained—The departments of labor for which each best fitted—Pestalozzi's method of preparing Monitors, and the work allotted them—Instruction of Pupil-Teachers, general and special—Their management—Special cases examined—Pupil-Teachers almost essential to a good school, and amply repay labors of first year or two—to be early trained to "self-education"—When so trained a great relief to the Teacher—Always to be had where practicable.

10. *Examinations,* for the satisfaction of the public—The parents—The Teacher—The design and special advantages of each—Manner of conducting them—Abuses—Addresses to parents a most desirable adjunct—Suitable topics for such addresses.

11. *Holidays,* their use and number—Never to be given at fairs, wakes, &c.—Not generally desired by children in a well-conducted school.

12. *Dealing with Parents.*—Position of the parent—Its relation to the Teacher—Conclusions—The double duty of a Teacher to the parent and the school—Course to be taken—Necessity of a conciliatory manner in dealing with parents who will not submit to rules—On punishing children at the request of parents.

13. *Visitors,* special and casual—Connection of the former with the school—Attention and courtesy due to them—How far the usual arrangement of a school may be changed for visitors—Their suggestions—Spirit in which to be taken—Use to be made of them.

14. *Inspectors.*—The peculiar character of their office—Inspection always to be obtained when practicable—Its value to a good Teacher—Their view of a school contrasted with that of the Teacher—Their relation as well to the Teacher as to the Patron—The Teacher's best friend—Inspection anticipated—Preparation to be made—Lessons to be given before Inspector, as at other times.

15. *Patrons and Committees.*—Relation to the school—Claims—The blessing of a good Patron—Difficulties with Patrons or Committees—The self-will and pride of a Teacher not to be mistaken for conscience, or the love of doing good—Principles and ends to be kept in view rather than plans—Not to thwart or oppose even when not convinced—to give way in minor matters if vital points are untouched—Circumstances which appear to justify giving up a school.

IV.—The Government of a School.

1. *The Nature and Object of this Government.*—All plans of government, if good, must be adapted to the uniform tendencies of human nature—Qualifications required in order to govern well—Importance of government in a school, as often giving to the

child first ideas of subordination—Essential also to the comfort of the Teacher—To the progress and happiness of the children—Disorder the master defect of many schools—Dislike to Teachers often caused by misgovernment.

2. *A knowledge of the Principles of Action in Childhood required in order to Govern well.*—The principles enumerated—Their importance—Scripture references on the influence of habits—Wisdom and beneficence of the Creator seen in the early formation and power of habits—Difficulty of ascertaining motives—Importance of knowing them—The use to be made of them in governing a school.

3. *Parental Government.*—Different kind of rule as to their spirit—The political—The military—The family—Characteristics of each—Reasonableness of requiring the parental spirit in Teachers—In what it consists—Effects of possessing the spirit—The parental spirit manifested by God—Seen in Christ—The parental spirit should govern our schools—Our debt to Pestalozzi for advocating it so powerfully—His fundamental principle in all moral development and training.

4. *Authority*—Meaning of the term—Abuses of authority—Modern mistakes—Importance of authority in the school-room—How to be used—Adaptation to the nature of the child—Mistakes as to governing by love alone—Rules to be adopted in establishing and maintaining authority.

5. *Kindness.*—Distinguished from other affections—Love essential to a Teacher—Shock often received by children when transferred from a mother to an unkind Teacher—Influence of Kindness—Principles on which based—Manner of carrying them out—Caution against extremes.

6. *Justice.*—Definition—Temptations to partiality—Children's appreciation of justice—Written rules often useful.

7. *Fear.*—Its abuses as a principle of government shown in the conduct of parents, teachers, and nurses—The use of fear in the moral economy of the child, and consequently its use by the Teacher—Cautions.

8. *Influence.*—What it is to govern with the will of a child—Means of obtaining influence—its true value both in the Infant and Juvenile School.

9. *Appeal to Principle.*—Nature of principle, or sense of right and wrong—Relative position among motives of action—Advantages—The result, self-government, &c.—Perfection of a school as to government, when good conduct proceeds from principle.

10. *Prevention.*—Importance of this principle as applied to the government of a school—Children to have full occupation—To associate pleasure with learning—Teacher to call in aid the public opinion of the school—To obtain the co-operation of parents.

11. *Rewards.*—What they are—How they act—Injurious as being an artificial excitement—As giving wrong views both of justice and merit—As rousing a mercenary spirit—As exciting vanity and pride—Means to be used to make promised rewards unnecessary—Example of Hofwyl—From our Infant Schools—The highest motives to be cultivated—Animal motives to be properly directed—Different ways of rewarding merit—Value of a reward consists not in the actual value of what is bestowed, but in the association created—Reward occasional and not expected—When it is not an incentive to exertion, but a proof that merit is recognized, it gives the idea of justice.

12. *Punishments.*—Nature, design, and spirit—Difference between punishment, correction, and discipline—The true end of punishment—Mistakes of the passionate Teacher—Effects of these on the child—Punishment should arise out of the fault—God's dealings with us our example—Natural punishments enumerated—Children to be shown the connection between sin and punishment—An unvarying punishment impossible—Should differ according to character and disposition, and the nature of faults, &c.—Evils of severe punishments—Importance of discrimination—Public exposure as a punishment—Spirit that leads a teacher to expose her pupils for her own gratification—Effects of exposure on different dispositions, and on spectators—Corporal punishment—Former and present practice contrasted—Opinion of Dr. Arnold and Dr. Bryce—Pestalozzi's rules for using it—Its absence in a good school—Expulsion when to be resorted to—Circumstances to attend it.

13. *Emulation.*—Nature of the principle—Usual application—Meaning of the word—Natural emulation, distinguished from Scripture emulation—"Generous rivalry," and "rivalry a means of self-knowledge," false ideas—Natural emulation not to be stimulated—Difficulties of a Teacher not using emulation—Substitutes for it, as—Desire to overcome difficulties—To gain knowledge—To please a much-loved Teacher, &c.

VII. SPECIMEN OF LESSONS

IN THE MODEL AND TRAINING SCHOOLS OF THE HOME AND COLONIAL SCHOOL SOCIETY.

SPECIMEN OF LESSONS GIVEN IN THE MODEL SCHOOLS OF THE HOME AND COLONIAL INFANT AND JUVENILE SCHOOL SOCIETY.

It is the practice for the different teachers in the Institution to draw up sketches of the lessons they have to give, and these sketches are here inserted to illustrate the manner in which the course of instruction is graduated, and that the system may be seen at work as a whole. The first lesson begins with pupils of three and four years old; the last is to the students under training. The lessons are given, in these examples, by the regular teachers of the Institution, and not by those who are learning the art of teaching.

LESSON GIVEN TO THE LOWEST DIVISION OF THE INFANT SCHOOL.—NUMBER.

The Superintendent explained to the company that the object of the lesson to be given was to develop the idea of Four.

Sketch.

1st.—I shall exercise the children in the number 3, to ascertain whether they have a correct idea of it; for example, I will call a child to bring me 3 pointers from among many, then 3 bottles, &c. To give the idea of 4, I will add 1 pointer to the 3 pointers, 1 bottle to the 3 bottles, &c., and make the children observe and repeat after me, as I point, 4 pointers, 4 bottles, &c.

2d.—To ascertain whether they connect the right idea with the name, I will ask them to bring me 4 pointers, 4 bottles, &c.

3d.—To see if they can apply the names themselves, I will hold up 4 bottles, 4 pointers, &c., and get them to tell me how many there are.

Lastly, I will make them go over together, in succession, the numbers they have learnt, that they may obtain an intuitive perception of enumeration, 1 bottle, 2 bottles, &c.; after this make them say, 1, 2, 3, 4, several times.

Teacher.—I should like a little child to bring me 3 bottles. Let Charles bring them.

The child named brought 2.

T.—Is he right?
Several.—No.
T.—Who can do it?
Several.—I can.

A little boy rose at the bidding of the teacher, and brought another bottle to her, making up the number 3.

T.—Now who can bring me 3 shells? (pointing to some placed at a little distance.)
Several—I can.
T.—Let Emma bring them.

The little girl referred to brought the proper number.

T.—Now who can bring me 3 pointers? (referring to some small pieces of wood used in the instruction of the children.)
A little Girl.—I can.

The child rose and brought the number of pointers required.

T.—Has she brought them right?
All.—Yes.
T.—Now some child bring me 3 stones.

A little girl brought 3 stones from the same place.

The teacher finding that the children had a correct idea of 3, placed before them the same articles in groups of 4, and called upon them to repeat after her, "four pointers."

All.—Four pointers. (The words were repeated three or four times.)
T.—Now say, "four stones."
All.—Four stones.

The same repetition took place in the case of the bottles and shells.

The teacher's next point was to ascertain whether the children connected the right idea with the name 4, when she used it.

T.—Who can bring me 4 pointers?
A little Girl.—I can.

The child rose and brought them to the teacher.

T.—How many pointers are there?
All.—Four.
T.—Then did Lizzy bring them right?
Three or four voices.—Yes.
T.—Now I should like to have 4 bottles.

A little boy rose and brought to the teacher 3.

T.—Is he right?
Several voices.—No.
T.—Who can make the number 4?
A little Boy.—I can.

He then rose and brought another.

T.—Now how many bottles are there?
Several voices.—Four.
T.—Who can bring me 4 shells?
A little Boy.—I can.

He brought them to the teacher.

T.—Is he right?
Many voices.—Yes.

The same thing was repeated in the case of 4 stones, 1 stone, 2 stones, 3 stones, 4 stones, 1 bottle, 2 bottles, 3 bottles, 4 bottles, &c.

The teacher's third point was to see if the children could themselves correctly apply the name; to do this, she called upon them to pick up 4 shells, 4 stones, &c., which they did correctly. They then practiced numeration up to the point they had reached, to obtain an intuitive perception of the increase of numbers;

they said after the teacher, 1 stone, 2 stones, 3 stones, 4 stones; 1 bottle, 2 bottles, 3 bottles, 4 bottles; 1, 2, 3, 4.

T.—Now, Thomas, (addressing one of the children,) can you bring me 4 children? 4 who are sitting up nicely.

The little boy spoken to, rose, selected 3, and led them to the teacher.

T.—Well, Thomas, have you brought 4?
Thos.—Yes.
T. (*to all.*)—Thomas says he has brought 4 children; are there 4 here?
Nearly all.—No.
T.—Let us count; 1 child, 2 children, 3 children. Let me have 4, Thomas.

He fetched another boy, who walked before the rest to take his place by their side.

T. (*to all.*)—Should he go before the other children?
Two or three voices.—No.
T.—To be sure not, he should come round behind them.

The child was then led round, and placed by the side of the three children.

T.—Now say, "1 child," (it was repeated,) "2 children," "3 children," children."
Now let three children go to their seats. Now one.

The children then went to their seats.

T.—Who can show me four fingers?

A little boy held up all the fingers, and the thumb of both hands.

T. (*to all.*)—Are there only four there?
Several voices.—No.
T.—See what a number of fingers! How many did I ask for?
Several voices.—Four.

The teacher then counted four on her own fingers.

T.—Now, Emily, show me four.

The little girl addressed, held up that number of fingers.

T.—How many does she hold up?
All.—Four.

The lesson then closed, and the children marched out of the room singing, a more advanced class occupying their places.

A LESSON GIVEN TO CHILDREN A LITTLE OLDER, THE SECOND DIVISION OF THE INFANT SCHOOL, AGES FOUR, TO FIVE AND SIX.

The Superintendent stated that two short lessons would be given to the children. The aim of the first lesson would be, to make the children observe the different parts of a watch; the second would be on three objects, to lead them to observe the quality of crumbling. He begged that the age and state of development of the children might be kept in mind.

Sketch.—A Watch.

1st.—I will get the children to point to the parts of a watch, or to something that it has, as case, glass, face, hands, &c.; and will tell them the right names if they do not know them.

2d.—I will lead them to observe and tell the position of the different parts, and their number.

Having sung the song, "Work away," the children commenced the lesson.

Teacher.—(Holding up a watch.) What is this?

Several voices.—A watch.

T.—Now look well, and tell me some part.

C.—The hands.

T.—Yes. Tell me another part.*

All.—The glass.

T.—Repeat, "The watch has hands and a glass."

T.—Find another part. (The rim or edge is pointed to.) What do you call this?

C.—The rim.

T.—Another part. (A pause.) Is there any part of the watch which you can not see when I hold it up?

C.—Yes, the inside.

T.—Now I think you can tell me some other part.

C.—The outside.

T.—Repeat, "The watch has an outside and an inside."

The children repeated the words.

T.—You have told me the watch had hands. Where do the hands meet?

C.—In the middle.

T.—In the middle of what?

C.—The face.

T.—Well, now you have told me two other parts.

C.—The watch has a middle and a face.

T.—Now tell me how many hands the watch has.

C.—Two:

T.—Are they both alike?

C.—No.

T.—How are they unlike?

C.—One is long, the other short.

T.—Say, "The watch has two hands, one long and one short."

The children did so.

T.—Can you not find out something more about the face?

C.—Numbers. (Other children,) Figures.

T.—Repeat together, "The face has numbers."

Children do so.

T.—Tell me some other part which you have named.

C.—The glass.

T.—How many glasses has the watch?

C.—One.

T.—And what does the glass cover?

C.—The face.

T.—Say, "The watch has a glass, which covers the face." Well, now you have been looking at the watch, and have told me what you can see. Who can tell when a watch is near, even if they did not see it?

C.—I can. It ticks.

T.—What is the use of a watch?

C.—It tells the clock.

Another.—It tells what time it is.

T.—Yes, and there is something else which tells the time; what is it?

C.—A clock.

T.—Now let us sing about the clock.

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* The parts were written with chalk on a slate, and gone over once or twice during the progress of the lesson.

The children then sang with their teachers, a song commencing—

"The neat little clock, in the corner it stands."

THE SECOND PART OF THE LESSON.

Sketch.—To Develop the Idea of Crumbling.

1st.—I will bring before the children a lump of salt, of dry earth, and stale bread, and lead them to observe their crumbling or friability, by rubbing them in my hands, also by a comparison with a stone.

2d.—Tell them this quality is called crumbling, and get them to apply the term to each substance.

3d.—Call upon them to tell me when we ought to say things are crumbling.

Teacher.—I have several things to show you; let me see if you can tell me what they are. (Holds up a lump of salt.) What is this?

Children.—Salt.

T.—Look now at it, (rubs the salt in her hands.) What do you see? How is the salt now?

C.—It is in little pieces.

T.—What have I done to it?

C.—You rubbed it, teacher.

T.—And what happened to the salt?

C.—It came into pieces.

T.—Repeat together, "Salt when rubbed comes into little pieces."

T.—(Holds up a piece of dry mould.) Now what have I in my hand?

C.—Dirt—earth.

T.—How does it look?

C.—Very dry.

T.—Now look, and tell me what I do to it, (rubs it in her hand.)

Many hands were held out, to show they were ready to answer.

T.—Will John tell me?

C.—It comes into little pieces when rubbed, like the salt.

Children repeat this.

T.—(Holds up a piece of stale bread.) What is this?

C.—Bread.

T.—Observe what I do, and tell me.

C.—You have rubbed it.

T.—And what then?

C.—It comes into small pieces.

T.—Can you tell me what sort of bread it is?

C.—Stale bread.

T.—(Takes up a stone.) What is this?

C.—A stone.

T.—(Rubs it.) What am I doing to the stone?

C.—Rubbing it.

T.—What happens?

C.—It is hard, not like the salt and stale bread.

T.—Now tell me the difference; who can?

A little girl is selected to answer.

The salt, earth, and bread, came into little pieces when you rubbed them, but the stone did not.

T.—Did you ever see bread rubbed into little pieces before?

Several children.—Oh, yes. Mother rubs the bread into the milk for baby.

T.—What do you call it, when you do so to the bread?

A child.—Crumbling it.

T.—You may say the bread is crumbling. Tell me some other things that are crumbling.

C.—Salt—dry earth.

T.—What are they?

C.—Crumbling.

T.—When may you call things crumbling?

C.—When they come into little pieces.

T.—Now tell me some things that are not crumbling.

C.—Stone, wood, iron, leather.

T.—Now repeat together, "Things that come into little pieces when rubbed, are called *crumbling.*"

The lesson here ended, as the time was expired, and the visitors proceeded to the infant school-room.

A LESSON ON SCRIPTURE NATURAL HISTORY. HIGHEST DIVISION, OR ADVANCED CHILDREN OF THE INFANT SCHOOL.

Sketch.

Silver.—To illustrate the refiner's work.—Malachi, iii. 3.

The Superintendent explained, that this was a lesson on silver ore, and a piece of silver, the object being to throw light on the Scripture by means of a natural object. The step was much more advanced than those already witnessed, the children being older, and their minds more developed.

1st.—I will show the children a piece of silver, and also some silver ore; question them as to the difference; one bright, reflective, and valuable; the other impure, mixed with inferior substances, which render it much less valuable, and destroy its best qualities. Having drawn from the children all they know as to how silver may be obtained from its ore, I will bring before them the work of the refiner. He places the ore in a furnace which removes the earth united with the silver, still there may remain much dross, or scum, to dull its brilliancy; the refiner patiently sits watching the purifying process, he never leaves his work till the bright metal reflects perfectly, like a mirror, his image. Then he knows his work is done. I will then write the result on the slate: "Silver when taken from the earth is very impure, but the dross is separated by fire, and when quite pure it reflects perfectly the refiner's image."

2d.—I will read Mal. iii. 3; question the children as to whom the refiner represents; whom the silver. I will help the children to trace out our resemblance to silver ore; so much of sin mixes up with all we do; so defiled by evil, that we do not reflect the Saviour's image, we are not like him. Then I will endeavor to lead them to see how the Saviour is like a refiner; he sends trials and chastisements, which act like a furnace in removing the evil that defiles us, till we become more and more like himself.

The result written on the slate, "Christ purifies his people from sin, by sending them trials till they become like him."

3d.—Apply the subject. What makes the children like the ore? When does their teacher act like a refiner? Whom does she wish them to be like? How should they receive her admonitions?

The children having sung—

A piece of silver ore, and one of bright silver, were exhibited by the teacher.

Teacher.—(Holding up the bright silver.) What is this?

All.—Silver.

T.—What is this? (exhibiting the ore.]

No answer.

T.—Suppose you were walking along the street, and saw this lying on the ground, what would you call it? What does it look like?

C.—It looks like a piece of stone.

T.—(Exhibiting the bright metal.) What do you know this to be?

All.—Silver.

T.—Would you think this silver? (presenting the ore.)

C.—It looks like a piece of coal.

T.—You would not think this silver, (pointing to the ore,) but when you look at that (pointing to the polished silver,) you know at once that it is silver; what difference do you observe in them?

C.—One is white, and the other is blue.

T.—What besides?

C.—One is bright, the other is dull.

T.—Now tell me something in which you can see yourselves, or your image.

C.—A looking-glass.

T.—Why can we see ourselves in a looking-glass?

C.—Because it is reflective.

T.—What can you say of a looking-glass?

C.—It is reflective.

T.—Which of these is like the looking-glass in this respect?

C.—The bright silver.

T.—Is this (holding up the ore) reflective?

C.—No.

T.—What can you say of these two?

The children repeated together, "the one is reflective, and the other is not."

T.—Which would you rather have?

C.—The bright silver.

T.—Which is worth the most money?

C.—The bright silver.

T.—And because the bright silver is worth the most money, what is it said to be?

C.—Most valuable.

T.—Can you find out any reason why the silver in this piece (pointing to the ore) is not so bright as in this (pointing to the silver)?

C.—Because it is like stone.

T.—What makes the silver look like stone? can you find out?

C.—It is mixed with stone.

T.—Silver is taken from the earth in this state (pointing to the ore,) mixed with stones and other things; what would you call it when thus mixed.

C.—A mixture.

T.—What is a mixture?

C.—Several things mixed up.

T.—When water is mixed with mud, what do you say it is?

C.—"Dirty," "unclean," "filthy," "unpleasant."

T.—There is another word?

C.—Black.

T.—What do you say it is when it is nice and clean?

C.—"Clear," "fresh."

T.—What else?

C.—Pure.

T.—Yes, when it is not mixed it is pure. When a thing is not mixed, what is it?

C.—Pure.

T.—Now, which of these two pieces of silver is pure? (A pause.) What would you say this is? (showing the ore.)

C.—Unpure.

T.—Can a child correct her?

C.—*Im*pure.

T.—Now say, "That is impure silver.

The children all repeat the words.

T.—Now say, (pointing to the bright silver,) "That is pure silver."

T.—When is silver impure?

C.—When it is taken out of the ground.

T.—Say, "When silver is first taken out of the ground, it is impure."

The words were repeated by the class and the teacher wrote them upon the slate.

T.—Now what must have been done to make this (referring to the bright silver) look as it does? What must be done to it after it is taken out of the earth?

C.—It must be polished.

T.—Do you think if I were to rub the ore, I should, by so doing, ever make it pure?

C.—No.

T.—Is polishing, then, the way to make it pure? What is it mixed with?

C.—Stones and earth.

T.—Yes; and it is often mixed with lead. If I rubbed the lead, should I make it silver?

C.—No.

T.—How could I get the silver pure? (No answer.) What must I do to make muddy water pure?

C.—Take the mud away.

T.—Yes. What do you think I must do to the silver ore to get it pure?

C.—Take away all the earth and stones with which it is mixed.

T.—I do not think you know how this is done; so I will tell you. The man who purifies this silver ore, or refines it, puts it into a vessel, and then he puts the vessel into a kind of furnace. Do you know what a furnace is? (A pause.) It is a kind of oven; and when it is there, what do you think the heat does to it?

C.—Melts it.

T.—Yes, the heat melts it; and then what becomes of all the earthy substances which are mixed with the silver? (A pause.) They rise to the top, and the silver remains at the bottom. And what do you think the man who is refining the silver does then to get rid of the impurities? I think some of you have seen your mothers do something of the same kind.

C.—Skim it.

T.—Yes, the man skims off what is at the top. Now, what is it that separates the impure substances from the silver.

C.—The heat of the fire.

T.—Say, "The fire separates the silver from the impure substances."

The children repeated this.

T.—What is the man called?

C.—The refiner.

T.—How does the refiner know when the silver is refined? (A pause.) You can not tell me. How does he know when all the impurity is removed?

C.—When there is a great smoke.

T.—Not quite so. Would you like to know?

All.—Yes, teacher.

T.—Well, the silver, remember, is in the furnace, and the fire is separating all the impurities from it. The refiner sits down and looks at it, and when the impurities rise to the top, he takes them off; and then he sits down and looks again; he does not get weary, but sits there and watches the impurities as they rise up; and he takes them off as fast as they rise. At last, all the impurities are taken away, and the silver looks so bright that he can see his face in it—he can see his own image. What can he see?

All.—His image,

T.—Say, "The silver, when purified perfectly, reflects the refiner's image."

The children repeated this.

T.—Like what?

C.—Like a looking-glass.

T.—Yes. If you look in a looking-glass, what do you see there? You see your image. Well, the silver does just the same as the looking-glass. The refiner sits and watches it all the time it is in the furnace.

A little Boy.—Teacher, how does he touch it when he wants to do any thing with it, and it is so hot?

T—Think—what does your mother use?

C.—Uses a spoon.

T.—Yes; he uses a spoon. He sits there and skims it, until he can see his image in it. What does he know, then?

C.—That the silver is pure.

A little Boy.—Would he get the silver out of that stone? (pointing to the ore.)

T.—Oh, yes, Jackson; and that is the way in which men get it. It is at first all mixed with impurities; but they break it up into small pieces, and put it into the furnace; and then how is it made pure?

All.—By fire.

The teacher then wrote on the slate, "When silver is taken out of the earth it is impure. It is separated from its impurities by"—what?

C.—By fire.

T.—And when it perfectly reflects the image of the refiner, then it is in—what state?

C.—Then it is pure.

The teacher having written all these points on the slate, the children repeated them.

T.—What will the silver do when it is pure?

C.—Reflect the image of the refiner.

T.—What does the refiner do if he can not see his image in it?

C.—He puts it on the fire again.

T.—Yes: he will not take it away until he sees his image, and when he sees his image perfectly reflected, what does he do with the silver?

C.—He takes it out.

T.—Yes; he would not keep it in a minute after—he takes it out immediately.

T.—Tell me the two things about which the refiner is careful.

C.—He is careful not to take the silver out of the furnace till it is pure; and he is careful not to keep it there when it is pure

T.—And how does he know?

C.—When it is pure it reflects his image.

T.—Now, dear children, I have given you this lesson on refining silver, to lead you to understand what Jesus Christ does for us. Listen to this passage of

Scripture. Speaking of the Lord Jesus Christ, it says, "He shall sit as a refiner and purifier of silver, and he shall purify his people, and purge them as gold and silver, that they may offer to the Lord an offering in righteousness." (These words were read by the teacher twice.) Who is spoken of here?

C.—Christ.

T.—Who shall "sit?"

All.—Christ.

T.—As what shall he sit?

Several voices.—As a refiner.

T.—Yes, he shall do something like what the refiner does. "He shall sit as a refiner and purifier." Repeat those words. (The children did so.) And what shall he do? (A pause.) "He shall purify his people." What shall he do?

All.—"He shall purify his people."

T.—"He shall purify his people, that they may offer to the Lord an offering in righteousness." Now, let me see; Christ is here spoken of as a refiner. What does a refiner do?

C.—Purifies silver.

T.—Yes, or any metal. But what does Christ purify?

C.—His people.

T.—Why do his people want purifying?

C.—Because they are sinners.

T.—Yes, because they are sinners. Which of these two things are we like? (Exhibiting the silver ore and the bright silver.)

C.—We are like the silver ore.

T.—What did we say of the ore?

C.—It is impure.

T.—Yes, it is mixed with impurities; and what part of us is so?

C.—Our hearts.

T.—How are our hearts like silver ore?

C.—They are sinful.

T.—Another word?

C.—They are hard.

T.—Again?

C.—"Stony," "mixed."

T.—With what are our hearts mixed?

C.—Mixed with sin.

T.—Give me a text which says that our hearts are mixed with sin? (A pause.) "We are all as an unclean thing." Repeat that.

The children repeated the text.

T.—Well, now let us examine a little, and see what is mixed up with us, and what makes us impure. When you came here in the morning, and all knelt down, what ought your thoughts to have been?

C.—Pure.

T.—What should they have been about?

C.—About God.

T.—Whilst the prayer was being repeated, what should you have been thinking about?

C.—About God and heaven.

T.—Now, do not answer me; but all of you try and remember how you prayed this morning. (A pause.) What is continually mixed with your thoughts?

C.—Sin.

T.—During the Bible-lesson this morning, when you were repeating texts of Scripture, your thoughts were not, I fear, all about God; many of you were thinking about other things. If this be the case, what were your thoughts mixed with at that time?

C.—Sin.

T.—What are our thoughts too often mixed with when we are at church?

C.—Sin.

T.—Yes, sin is there also. What then are our thoughts?

C.—Sinful.

T.—Is it only our thoughts that are sinful? What besides?

C.—Our hearts are sinful.

T.—Tell me some things that make our hearts impure.

Different Children.—Anger—pride—lying—stealing.

T.—Yes, and many more; our hearts are mixed up with sin. Now what must be done to our hearts to make them pure? What was done to the silver ore?

C.—It was purified.

T.—From what was it separated?

C.—From its dross, its impurities.

T.—And what must the heart be separated from, in order to become pure. (A pause.) What are the impurities of the heart?

C.—Sins.

T.—What, then, must be separated from the heart?

C.—Our sins.

T.—Yes, the heart must be separated from sin; who only can do that?

C.—Jesus Christ.

T.—When he purifies the heart, who does he act like?

C.—The refiner.

T.—The text says, "He shall sit as a refiner and purifier of silver." Repeat those words. (The children obeyed.) "He shall purify his people." "And purge them as gold and silver." (Repeated.) Now, how is the silver purified?

Several voices.—By fire.

T.—How does Christ purify his people?

C.—"By his Word"—"by his Holy Spirit."

T.—Yes; but it is difficult to purify our sinful hearts; there is something Jesus is obliged to do to us. When you are naughty, and there is a great deal of what is wrong mixed up with your conduct—a great deal of inattention and disobedience, what do I do?

C.—You punish us.

T.—Why do I punish you?

C.—To make us good—pure.

T.—To make you better. Now tell me, what does Christ do to his people; how does he purify them?

C.—He punishes them.

T.—Tell me some punishment he gives his people. How does he punish?

A little Boy.—With brimstone and everlasting fire.

T.—Yes, but that is everlasting punishment; there are punishments which he sends to make us better whilst we are on earth. Do you know one?

C.—(After a pause.) Sickness.

T.—Yes; he lays us on a sick bed, that we may be led to seek Jesus. When you have been naughty, and are punished for it, what do you say?

C.—"I will be better." "I will be good."

T.—You say you will be good, and you ask to be forgiven; why does Christ send affliction upon his people?

C.—(After a pause.) That it may make them wish to be good.

T.—And what ought they then to do?

C.—To pray to God that they may become better.

T.—When sin tempts them again, what is Jesus obliged to do?

C.—To punish them again.

T.—And what does he wish to take from them by punishment?

C.—Sin.

T.—Then Christ sends affliction to purify them—to make them good. And all the time they are afflicted what does Christ do?

C.—He watches them.

T.—Yes, he watches them. Now I will repeat the text again: "He shall sit as a refiner and purifier of silver, and he shall purify his people, and purge them as gold and silver, that they may offer to the Lord an offering in righteousness." What ought they to become after their affliction?

Several voices.—Pure.

T.—Yes, more pure; then what is the affliction sent to do?

C.—To purify them.

T.—How does Christ sit?

C.—As a refiner.

T.—What do the afflictions which Jesus sends his people do to them?

C.—Purify them.

T.—How does the refiner know when the silver is pure?

C.—It reflects his image.

T.—How are Christ's people, when purified, like the silver?

C.—They reflect his image.

T.—Yes, they become more and more like Jesus. Now you understand how Jesus is like a refiner. Repeat together: "Jesus is the refiner of his people, and purifies their hearts from sin."

The visitors proceeded to the Juvenile School.

LESSON ON THE MONTH OF OCTOBER. GIVEN TO THE ADVANCE CHILDREN OF THE JUVENILE SCHOOL.

The Superintendent explained that this lesson differed from the other lessons in being rather an examination than a lesson. The object here was to induce the children to observe the changes which take place in the weather, and in the animal and vegetable world, and to reason upon them. This course of lessons formed a kind of natural history of the year. The teacher would question the children as to what they had observed during the month of October.

Sketch.

I.—*General appearance of Nature.*

Weather in the beginning of the month sometimes calm and mild; sometimes the gales which generally blow during the latter part of September, continue through the first week of October; heavy clouds, with bright gleams of sunshine, are often seen throughout the day; call attention to the brilliancy of their appearance, with the rising and setting sun. Upon the whole the weather is fine; twenty fine days are generally expected during the month.

II.—*Signs of Winter.*

1. The days become perceptibly shorter, and the mornings and evenings become gradually more chilly, change of clothing required.

2. Vegetation begins to lose its color; some leaves of trees and shrubs fall; those which remain assume an almost endless variety of color in their progress from green to brown. At no season of the year does nature present us with so many changes. This change of the leaves is chiefly owing to the gradual descent of the sap, which makes them dry. Having now served their purpose. as far as regards the tree, they fall off; but here their use does not end; when life ceases, they are soon decomposed, and their elements again return to the earth to enrich and prepare it for fresh vegetation.

The gradual disappearance of insects, and swallows, and other summer birds, together with the silence of the singing birds, though the notes of the robin and the blackbird are still heard.

Flocks of water-fowl, and other winter birds of passage, now return, driven from northern climates by the cold, and by want of food. Of these are the duck, the woodcock, the snipe, and others; the latter feed in soft, marshy places; the former are found in lakes and ponds. Call attention to the order of their flight, their instinct, the nature of their covering at this season, and then to the wisdom and goodness of Him who has created, and who watches over the whole.

III.—*Farming and Gardening.*

1. Ploughing and sowing wheat.
2. Gathering in potatoes, turnips, beets. Felling timber.
3. Transplanting, collecting the remaining fruits, &c., &c.

Teacher.—What sort of weather have we generally during the month of October?

Children.—Changeable.

T.—When is the weather most settled?

C.—In summer and winter.

T.—What is the difference between summer and winter?

C.—It is warm in summer, and cold in winter.

T.—Does it pass at once from warm to cold?

C.—No, gradually.

T.—Which month of the autumn is October?

C.—The second.

T.—What difference would you expect to find between the weather in July and in October?

C.—It would be much the warmest in July.

T.—Yes. October and January would be about midway between summer and winter. But suppose we take the beginning of October, what sort of weather do we generally find then?

C.—Mild.

T.—Do you remember what the mornings are in September?

C.—Chilly.

T.—You remember that there are two periods of the year somewhat different from the rest. Generally speaking, it is mild early in October; but toward the end what is it?

C.—Cold.

T.—Yes, it is rather cold. What is the appearance generally, if we go out into the country and look at the sky?

C.—The sky is hazy, and the clouds are black and hide the sun.

T.—What difference is there, generally speaking, between the clouds in October, considering the month as a whole, and such as we have to-day?

C.—They are brighter and clearer in October.

T.—What sort of a cloud is this which we have to-day?

C.—A stratous cloud.

T.—Yes; what they call in the books a stratous cloud, covering the sky from end to end. If it be not a whole cloud, what do you call it?

C.—"Dispersed," "parts of a cloud."

T.—What do we see between the parts?

C.—Blue sky.

T.—And what besides?

C.—The sun peeping through.

T.—Yes, the sun peeping through. We have heavy clouds scattered through the sky, but here and there we see the blue sky, and the bright sun peeping through. What have you observed, morning and evening, near the horizon?

C.—It appears like gold.

Another voice.—It is like clouds tinged with gold.

A third voice.—It is like a sea of gold.

T.—Yes; that is better still. Well, then, let me write this down: "The beginning of October is mild; toward the end it is rather cold;" and throughout the month we have—what sort of clouds?

C.—Broken clouds.

T.—With what peeping through?

C.—The sun and the blue sky.

T.—Now, we have said that the beginning is mild, and the end cold. What does that denote?

C.—The approach of winter.

T.—There are several other signs which denote the approach of winter. Let us take them in their order. To begin with the days. What do you observe in the days?

C.—They get shorter.

T.—What besides shorter?

C.—Colder.

T.—When is the cold chiefly felt?

C.—In the evening and in the morning.

The teacher then wrote on the slate: "The weather toward winter becomes cold and the days shorter."*

T.—Do we make any changes in respect to ourselves?

C.—Yes; we put on warmer clothing.

T.—What does the fact of our being obliged to put on warmer clothing remind us of?

C.—The approach of winter.

T.—Now there is another important point. We have done with the first; the second is——

C.—The berries found in the hedges.

T.—We shall come to that presently. How do the fields look in July and August?

C.—Every thing is green.

T.—If we go out in the month of October, what do we see?

C.—The leaves are falling off the trees.

Another voice.—And they are getting yellow.

T.—"The leaves of the trees get yellow;" that is one point. The leaves also begin to fall off; but only very few. October is not the great month for the falling of leaves. They begin to fall, it is true; and what other change begins?

C.—They change in color.

A Boy.—Master, what makes the leaves change their color? Is it the cold?

T.—Keep that in mind, and ask me again presently. What is the color of leaves in July?

C.—Green.

T.—What in November?

C.—Brown or dark.

T.—While in their vigor what are they?

C.—Green.

T.—And when they fall off?

C.—Brown.

T.—Do they change at once from green to brown?

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* The slate was constantly used as facts were elicited, but it is not mentioned each time.

C.—No, they get brown gradually.

T.—Yes; and when you go out in October and look at the trees, what do you find with respect to color?

C.—There are different shades; yellow, and light green, and brown.

T.—From what color do they change?

C.—From green to brown.

T.—They assume a variety of colors as they pass from green to brown. Now, Thomas Jackson asked me just now why leaves change their color. Can any one tell him?

C.—The sap is purified.

T.—What made the leaves grow?

C.—The sap.

T.—When the sap goes, what takes place?

C.—The leaf begins to fade.

T.—Does all the color go at once?

C.—No, gradually.

T.—As the sap leaves it, what takes place in the leaf?

C.—It withers away gradually.

T.—What is the office of the leaf?

C.—To purify the sap.

T.—What becomes of the sap when it is purified?

C.—It goes into the tree.

T.—What use is the sap to the tree?

C.—It is the nourishment.

T.—What has the leaf lost?

C.—Its nourishment.

T.—And when it has no nourishment, what happens?

C.—It must wither and die.

T.—Yes; the sap being all gone, the leaf falls off. Is the leaf of service to the tree any longer?

C.—No.

T.—What has it done?

C.—It has purified the sap.

T.—Is it of any more service anywhere?

C.—Yes; as manure.

T.—The leaf decays, and becomes nourishment for—what?

C.—The earth.

T.—What a beautiful provision this is for restoring the richness that has been drawn out of the earth! You see nothing is thrown away by our great Creator. Tell me a lesson which the study of his works teaches us?

C.—Not to be wasteful.

T.—We have mentioned some of the changes which happen in October. Of what does the falling of the leaf remind us?

C.—Of the approach of winter.

T.—Now let us find something more reminding us of the approach of winter?

C.—Some birds leave this country; they go to warmer countries.

T.—You said that the mornings and evenings got colder, and we were obliged to change our clothes. What happens to the covering of animals?

C.—It gets thicker.

T.—Yes; that we know from the study of their natural history. What is the object of this?

C.—To keep them warm.

T.—Yes; and again we see the wisdom and goodness of God in his provision for the comfort of animals. There are some birds which leave our country, because it is too cold for them. What birds are these?

C.—The swallow.

T.—Yes; and what birds come to us?

C.—The solon goose, the woodcock, the snipe.

T.—Why are they obliged to come?

C.—Because the country which they come from is so cold.

T.—Yes; but there is another reason.

C.—Because they can get no food.

T.—Yes; these are the two things which always cause birds to migrate: want of food, and the necessity for a change of climate. What guides the birds in their migrations?

C.—Instinct.

T.—Who implanted this instinct?

C.—God.

T.—What are birds that come to us in winter called?

C.—Birds of passage.

T.—And when we see them arriving, what do they remind us of?

C.—The approach of winter.

T.—Now, if we were to go into the gardens at this season of the year, how should we see the gardener employed?

C.—In digging up the earth.

T.—What do you observe in gardens in autumn?

C.—The flowers are in seed.

T.—What is the use of the seed?

C.—To produce flowers next year.

T.—Do you recollect reading about a very fine old gentleman who came in with his hands full of something?

C.—Autumn.

T.—Yes; the autumn crops he had in his hand. What are these?

C.—Corn.

T.—Some fruits are gathered in October. How do people gather them?

C.—They have ladders, and they go up the trees with baskets.

T.—Why do they not shake the trees at once, and let the fruit fall off them?

C.—Because it would bruise the fruit.

T.—There is another employment of the gardener in October.

C.—Transplanting.

T.—Why does he transplant?

C.—That the plants may grow the better.

T.—Yes; but can you tell me another reason? What does he want for them when winter is approaching?

C.—Warmth.

T.—Does he take them from sheltered places and put them in a field?

C.—No.

T.—He knows that the winter is approaching, and he provides for the young and tender plants by putting them under cover, or in places of shelter. There is another reason for transplanting in autumn in preference to summer. What passes from plants when the sun shines much upon them?

C.—Moisture.

T.—Yes; they evaporate a quantity of moisture, and how do they then look?

C.—Dry and withering.

T.—By what means can they replenish the moisture they lose?

C.—The fibers of the root suck it up from the earth.

T.—Now when a plant is just removed, will the roots, do you think, act as well as they did when they were in their old situation?

C.—No.

T.—Now, then, try and find out why it is better to transplant plants in autumn than in summer. You know enough to tell me.

C.—Because in autumn they do not get rid of so much moisture, so it is not so much consequence if the roots do not suck up so much.

T.—Right; and when gardeners transplant in summer, why do they shade their plants?

C.—That there may not be so much moisture taken from them by the sun.

T.—Now, go over with me the indications of the approach of winter, which we have mentioned:—

1. The weather becomes cold.
2. The days get short.
3. The leaves change color and begin to fall.
4. The clothing of animals gets thicker.
5. Birds migrate.

(The time for this lesson expired before the teacher could work out the remaining subjects of his sketch.)

The visitors went next into the Students' training-room, to hear the remarks of the Head Master on the preceding lessons.

TRAINING ROOM.

Head Master.—What was the object of the first lesson?

Students.—To develop the idea of four.

H. M.—Can you tell me what we wanted the children to observe?

S.—To observe numbers for themselves.

H. M.—Our object in this first step was to cultivate the intuitive perception of number. You perceived that the teacher first directed the children to the objects as they were presented. What was done next?

S.—The name of the number was given.

H. M.—What next?

S.—The children themselves applied, or made use of the name learnt.

H. M.—Yes; the children were exercised in using the name to express the idea. Why was this done?

S.—To fix both on their minds.

H. M.—Can you tell me why a variety of objects were used?

S.—That they might obtain an abstract idea of the number.

H. M.—Yes; that they might see it did not belong to one set of objects, but might be applied to all. What was the subject of the second lesson?

S.—The first part was on a watch, for the children to observe its parts.

H. M.—What quality were they taught to observe in the second lesson?

S.—Crumbling.

H. M.—Can you tell me one principal object of early education?

S.—To cultivate observation.

H. M.—Is that the only object of early education?

S.—To strengthen all the faculties.

H. M.—Yes; to cultivate, strengthen, and direct the faculties. Where should we start?

S.—Where the child is.

H. M.—What do you mean?

S.—We ought to come down sufficiently low to take the child just at the point of his own experience.

H. M.—Yes; then to carry out the object of education, we must find the starting-point for our lessons in the child. Can you tell me where this starting-point is? or, in other words, what we find in the child made ready for our use?

S.—Observation through the means of the senses.

H. M.—Yes; in intellectual education we commence by availing ourselves of the activity of the senses. What are the senses doing for the child?

S.—Storing his mind.

H. M.—Yes; storing his mind with ideas, and exciting his interest in all around him. Now, what sort of lessons are best fitted for this work.

S.—Lessons which call the senses into active exertion.

H. M.—Yes, this is what we desire to effect, and therefore we employ lessons adapted for this purpose. Suppose a child were left to himself, and nature were not interfered with, would he in that case get ideas?

S.—Yes; no doubt, many.

H. M.—What then is the use of giving a child lessons on objects, instead of leaving him to find out their properties himself?

S.—If left to himself he often forms wrong ideas.

H. M.—He forms not so much wrong, as very vague, imperfect ideas. A little child observes, but then he observes very hastily; his mind flits from quality to quality, and his ideas are generally superficial and inaccurate. Now, such lessons as those you have witnessed on objects assist very much in correcting the hasty notions which children form when left to themselves; they also lead to accuracy of expression,—this they are peculiarly fitted to cultivate, if properly given. When children have acquired a correct idea, what should you do?

S.—Give them a correct name for it, the name standing for the idea.

H. M.—How will a child, taught in this way, regard words in reference to objects?

S.—As the signs of ideas.

H. M.—Yes; he will think of a word as the representative of something else—as the sign of an idea. But is the object merely to give the child correct ideas, and to teach him to use correct expressions? (A pause.) What do you think is the effect of his daily examining the objects around him, taking an interest in them, and being accustomed to look at them attentively? Will he not by these means be better prepared to look at things correctly, when he goes into the world? Will he not, in the best sense of the word, have his eyes opened to see what is going on around him, and his senses brought into activity? Perhaps nothing shows us better than this kind of teaching how much it is possible for children to do for themselves when trained to the habit of investigating, examining, and discovering for themselves, without continually depending upon the help of others. Did you observe what the teacher told the children when giving the second lesson?

S.—Only what they were not able to find out for themselves.

H. M.—Was there any thing brought before them which they could not find out for themselves?

S.—No, Sir.

H. M.—Then the answer amounts to this, that the teacher told them nothing. Is that what you mean?

S.—No, Sir; she told them the names.

H. M.—It was the teacher's business, in the first part of the lesson, that is, on the watch, merely to draw the children's attention to its different parts; and in the second lesson to the quality, which had to be developed by observation of the three objects; and when the teacher was satisfied that the ideas were gained, the names were given. Nothing but the names were given, and that not till the ideas had been gained by the children themselves. Did you observe whether or not the questions were all put singly and independently? (A pause.)

S.—Two or three times the questions depended very much on each other.

H. M.—Do you know what to call a set of questions, so framed as to lead children up to a point which the teacher desires them to reach?

S.—A series of questions.

H. M.—Yes; two or three times the children were led to the point which the teacher had in view, by a series of questions depending on each other.

H. M.—What was the subject of the lesson in the most advanced portion of the infant school?

S.—Silver, and silver ore.

H. M.—What was the intention in choosing this subject?

S.—To illustrate a text of Scripture.

H. M.—Do you recollect how the teacher proceeded? What did she do first?

S.—She showed the first state of silver.

H. M.—What was that state?

S.—A state of impurity.

H. M.—What was the second point?

S.—That it was submitted to a refiner to purify it.

H. M.—First, there was the impure state of the ore; and, secondly, the process by which it was purified. What was the next point?

S.—The end accomplished by the purifying, the putting away of the dross, and leaving the silver pure.

H. M.—What quality did this give the silver which it did not possess before?

S.—It was reflective.

H. M.—Having got thus far, how did the teacher proceed?

S.—She read a text, and questioned the children upon it.

H. M.—Did she begin by explaining, in the usual way of teaching, what was meant by the refiner, and what was meant by the silver, and so on?

S.—No.

H. M.—Why not? Let us go over the lesson. She had, in a certain sense, told them this. The natural state of the silver, the process it underwent to purify it, the effects of this process, and the refiner's work, were the foundation on which the after part of the lesson proceeded. What did she bring out and build upon it? What were the religious ideas? First, the natural state of our own hearts, as they appear to Christ, the Refiner; secondly, that our great Refiner wishes to have us purified, and subjects us to a certain process, in order that we may be purified; thirdly, the result, moral purity, or the reflection of our great Refiner's image. What principle did the teacher thus illustrate? Why did she begin with silver before she proceeded to speak of moral purification? Was she able to make the silver and its two states better known to the children than the heart and its state by nature and grace?

S.—Yes. She had the objects before her.

H. M.—These were more obvious to a child, and were therefore made a stepping-stone to the spiritual truth. It is thus we proceed from what children know to what they do not know. Light is thrown upon the Bible, and the children associate with its study the pleasure derived from the study of natural objects.

H. M.—Our time is short—the subject of the lesson in the juvenile school was the calendar for October. What faculty of the mind did the children exercise?

S.—Memory.

H. M.—Yes, if you take the lesson of this day alone; but is that the usual aim of the teacher in his instruction? Is it memory only which is cultivated?

S.—No; the children are trained to the habit of observation, especially the observation of what is going on daily around them.

H. M.—Is there any difference between the observation thus cultivated and that cultivated at an earlier period?

S.—Yes.

H. M.—What is the main difference?

S.—The children in the one case make minuter observations than in the other, and the memory is more employed.

H. M.—Yes; the observation is decidedly more minute. Do you remark any other difference?

S.—It takes in a wider range.

H. M.—Yes; the sphere of observation with these children may be much extended. The appearance of the clouds, and what it indicates, the changes which take place in autumn, including those in the vegetable and animal world. The range of observation is not only much more extensive, but is also very much more minute in its character, and as you observe, the memory is more exercised. The instruction differs from that given to the younger children in this respect, that, instead of being called upon to observe single or isolated facts, the juvenile pupils are called upon to observe successions or chains of events, as they occur. To trace a number of phenomena to their causes, and observe the effects or the causes of others. Thus the judgment of the children is much improved, the memory strengthened, and the habit formed of reflecting upon natural events. In like manner we notice historical events as their anniversaries occur; for instance, the birthdays of great men, or their extraordinary actions.

VIII. SCHOOL ARCHITECTURE.

HISTORICAL PREFACE.

At the National Convention of the Friends of Public Education, held in Philadelphia, on the 17th, 18th, and 19th of October, 1849, and of which Hon. Horace Mann was President, Prof. James Henry, Secretary of the Smithsonian Institution in Washington City, Hon. Elisha R. Potter, Commissioner of Public Schools of Rhode Island, and Greer B. Duncan, Esq. of New Orleans, were appointed a Committee to report to the next Convention on the subject of School Architecture, including the location, size, ventilation, warming, and furniture of buildings intended for educational purposes. At the second Convention held in Philadelphia, on the 23d, 24th, and 25th of August, 1850, and of which Rev. Dr. Nott, of Union College, was President, the following Report, prepared by Mr. Potter, of Rhode Island, was submitted by Prof. Henry, with some introductory remarks on the general subject of American Architecture. The Report was ordered to be printed with the Proceedings of the Convention.

REPORT.

The subject of School Architecture has not, till within a comparatively recent period, received that attention from the public generally, or from practical educators in particular, which its important bearings, direct and indirect, on the health, manners, morals, and intellectual progress of children, and on the health and success of the teacher, both in government and instruction, demand. The earliest publication on the subject in this country, which has met the notice of the Committee, may be found in the School Magazine, No. 1, published as an Appendage to the Journal of Education, in April, 1829. In 1830, Mr. W. J. Adams, of New York, delivered a lecture before the American Institute of Instruction, "*on School houses and School Apparatus*," which was published in the first volume of the transactions of that association. Stimulated by that lecture, the Directors of the Institute in the following year offered a premium of twenty dollars for the best "*Essay on the Construction of School-houses.*" The premium was awarded by a committee of the Institute to the Essay by Dr. William A. Alcott, of Hartford, Conn., now residing in West Newton, Mass. This "Prize Essay" was published in the second annual volume of lectures before the Institute, as well as in a pamphlet, and was widely circulated and read all over the country. In 1833, the Essex County Teachers' Association published a "*Report on School-houses*" prepared by Rev. G. B. Perry, which is a searching and vigorous exposure of the evils resulting from the defective construction and arrangement of School-houses. From this time the subject began to attract public attention, and improvements were made in the construction and furniture of school-rooms, especially in large cities and villages.

In 1838, Hon. Horace Mann submitted a "*Report on School-houses*," as supplementary to his First Annual Report as Secretary of the Board of Education in Massachusetts, in which the whole subject, and especially that of ventilation, is discussed with great fullness and ability. This Report was widely circulated in a pamphlet form, and in the various educational periodicals of the country, and gave a powerful impulse to improvement in this department, not only in Massachusetts, but in other states In the same year, Hon. Henry Barnard prepared an "*Essay on School Architecture*," in which he embodied the results of much observation, experience and reflection, in a manner so systematic and practical as to meet the wants of all who may have occasion to superintend the erection, alteration, or furnishing of School-houses. This Essay was originally prepared and delivered as a lecture in the course of his official visits to different towns of Connecticut,' as Secretary of the Board of Commissioners of Common Schools. It was first published in 1841, in the Connecticut Common School Journal, and in 1842 was submitted, with some modifications and numerous illustrations, as a *Report on School-houses*, to the Legislature. It may be mentioned as an evidence of the low appreciation in which the whole subject was regarded at that time, in a State which prides herself on the condition of her common schools, and on the liberality with which her system of public education is endowed, that the Joint Standing Committee on Education, on the part of the Senate and House, refused to recommend the publication of this Essay, although it is by far the most thorough, systematic and practical discussion of the subject which has appeared in this country or in Europe. And it was only through the strenuous efforts of a few intelligent friends of school improvements that its publication was secured, and then, only on condition that the author should bear the expense of the wood-cuts by which it was illustrated, and a portion of the bill for printing. Since its first publication more than one hundred thousand copies of the original Essay have been printed in various forms and distributed in different states, without any pecuniary advantage to the author.

In 1842, George B. Emerson, Esq., in Part Second of the School and Schoolmaster, devoted a chapter to "The School-house," in which sound and practical views of the location, size, and ventilation and warming of edifices for school purposes, are presented and illustrated by appropriate cuts. A copy of this valuable work was presented to each of the 11,000 school districts in the State of New York, and each of the 3,400 districts in Massachusetts. In 1846, Nathan Bishop, Esq., Superintendent of Public Schools in the City of Providence, published a Report on the School-houses of that city, with numerous wood-cuts illustrative of the peculiarities of the furniture and internal arrangements of the buildings devoted to each grade of school. These houses were constructed after an examination of the latest improvements which had been introduced in the School-houses of Boston, Salem, and other large cities and villages in Massachusetts, and have been much consulted by committees and builders as models.

In 1848, Mr. Barnard republished his Essay, with plans and descriptions of numerous School-houses which had been erected under his direction, in Rhode Island and Connecticut, and including by permission all of the plans of any value, which had been published by Mr. Mann, Mr. Emerson, Mr. Bishop, and other laborers in this field—with the title of "*School Architecture, or Contributions to the Improvement of School-houses in the United States.*" As the title conveys a very inadequate view of the fullness and completeness of this valuable work, the Committee feel that they can not better promote the object of their appointment than by calling the attention of the Convention to the general views with which the subject was approached by this Author, and to the table of contents which will be found appended to the extracts which we have been permitted to make from this volume.

"The subject was forced on the attention of the author in the very outset of his labors in the field of public education. Go where he would, in city or country, he encountered the district School-house, standing in disgraceful contrast with every other structure designed for public or domestic use. Its location, construction, furniture and arrangements, seemed intended to hinder, and not promote, to defeat and not perfect, the work which was to be carried on within and without its walls. The attention of parents and school officers was early and earnestly called to the close connection between a good school-house and a good school, and to the great principle, that to make an edifice good for school purposes, it should be built for children at school, and their teachers; for children differing in age, sex, size, and studies, and therefore requiring different accommodations; for children engaged sometimes in study and sometimes in recitation; for children whose health and success in study require that they shall be frequently, and every day, in the open air, for exercise and recreation, and at all times supplied with pure air to breathe; for children who are to occupy it in the hot days of summer, and the cold days of winter, and to occupy it for periods of time in different parts of the day, in positions which become wearisome, if the seats are not in all respects comfortable, and which may affect symmetry of form and length of life, if the construction and relative heights of the seats and desks which they occupy are not properly attended to; for children whose manners and morals, whose habits of order, cleanliness and punctuality,—whose temper, love of study, and of the school, are in no inconsiderable degree affected by the attractive or repulsive location and appearance, the inexpensive outdoor arrangements, and the internal construction of the place where they spend or should spend a large part of the most impressible period of their lives. This place, too, it should be borne in mind, is to be occupied by a teacher whose own health and daily happiness are affected by most of the various circumstances above alluded to, and whose best plans of order, classification, discipline and recitation, may be utterly baffled, or greatly promoted, by the manner in which the School-house may be located, lighted, warmed, ventilated and seated. With these general views of school architecture, this essay was originally written."

The volume will be found on examination to contain:

1. An exposition, from official documents, of common errors in the location, construction, and furniture of School-houses as they have been heretofore almost universally built, even in states where the subject of education has received the most attention.

2. A discussion of the purposes to be answered, and the principles to be observed, in structures of this kind.

3. Descriptions of a variety of plans, adapted to schools of every grade, from the Infant School to the Normal School, in a variety of styles, having a Gothic, Elizabethan, or classic character, and on a large or small scale of expense; either recommended by experienced educators, or followed in buildings recently erected in this country or in Europe.

4. Numerous illustrations of the most approved modes of constructing and arranging seats and desks, and of all recent improvements in apparatus for warming and ventilating school-rooms and public halls generally.

5. A catalogue of maps, globes, and other means of visible illustration, with which each grade of school should be furnished, with the price, and place where the several articles can be purchased.

6. A list of books, with an index or table of contents to the most impor-

tant volumes on education, schools, school systems, and methods of teaching, suitable for school libraries, with reference to catalogues from which village libraries may be selected.

7. Rules and regulations for the care and preservation of School-houses, grounds, and furniture.

8. Examples of exercises suitable to the dedication of School-houses to the sacred purposes of education.

9. A variety of hints respecting the classification of schools.

It will not be necessary to specify further the official reports and periodicals in which the subject has been discussed within a few years past, or to mention in detail the various improvements which have been introduced in the construction of school furniture, and in modes of ventilation and warming. Most of the plans which have been brought before the public, and which have been found on trial to be valuable contributions to plans before published, are embodied in the recent editions of Mr. Barnard's work. In conclusion, the Committee beg leave to present the following summary of the Principles of School Architecture, which the author of that work has drawn up at their request, as presenting the result of his observations and practical knowledge in this department of educational improvement. He has also placed at the disposal of the Committee numerous plans for schools of different grades, selected from his book, or prepared for subsequent editions, which are herewith communicated as a part of this Report.

Philadelphia, Aug. 23, 1850.

The above Report was published as an Introduction to an abridgment of this work, under the title of Practical Illustrations of the Principles of School Architecture, and is adopted in this revised and enlarged edition, of the original treatise, because it contains not only a brief and accurate sketch of the various publications on the subject of School Architecture, but a summary of the aims and contents of this article.

PRACTICAL ILLUSTRATIONS.

In treating of School Architecture, it will be convenient to present—

I. Common Errors to be avoided.
II. General Principles to be observed.
III Plans and directions for erecting and fitting up school-houses adapted to the varying circumstances of country and city, of a small, and a large number of scholars, of schools of different grades and of different systems of instruction.

I. COMMON ERRORS IN SCHOOL ARCHITECTURE.

Under this head it will be sufficient to enumerate the principal features of school-houses as they are.

They are, almost universally, badly located, exposed to the noise, dust and danger of the highway, unattractive, if not positively repulsive in their external and internal appearance, and built at the least possible expense of material and labor.

They are too small. There is no separate entry for boys and girls appropriately fitted up; no sufficient space for the convenient seating and necessary movements of the scholars; no platform, desk, or recitation room for the teacher.

They are badly lighted. The windows are inserted on three or four sides of the room, without blinds or curtains to prevent the inconvenience and danger from cross-lights, and the excess of light falling directly on the eyes or reflected from the book, and the distracting influence of passing objects and events out of doors.

They are not properly ventilated. The purity of the atmosphere is not preserved by providing for the escape of such portions of the air as have become offensive and poisonous by the process of breathing, and by the matter which is constantly escaping from the lungs in vapor, and from the surface of the body in insensible perspiration.

They are imperfectly warmed. The rush of cold air through cracks and defects in the doors, windows, floor and plastering is not guarded against. The air which is heated is already impure from having been breathed, and made more so by noxious gases arising from the burning of floating particles of vegetable and animal matter coming in contact with the hot iron. The heat is not equally diffused, so that one portion of a school-room is frequently overheated, while another portion, especially the floor, is too cold.

They are not furnished with seats and desks, properly made and adjusted to each other, and arranged in such a manner as to promote the comfort and convenience of the scholars, and the easy supervision on the part of the teacher. The seats are too high and too long, with no suitable support for the back, and especially for the younger children. The desks are too high for the seats, and are either attached to the wall on three sides of the room, so that the faces of the scholars are turned from the teacher, and a portion of them at least are tempted constantly to look out at the windows,—or the seats are attached to the wall on opposite sides, and the scholars sit facing each other. The aisles are not so arranged that each scholar can go to and from his seat, change his position, have access to his books, attend to his own business, be seen and approached by the teacher, without incommoding any other.

They are not provided with blackboards, maps, clock, thermometer, and other apparatus and fixtures which are indispensable to a well regulated and instructed school.

They are deficient in all of those in and out-door arrangements which help to promote habits of order, and neatness, and cultivate delicacy of manners and refinement of feeling. There are no verdure, trees, shrubbery and flowers for the eye, no scrapers and mats for the feet, no hooks and shelves for cloaks and hats, no well, no sink, basin and towels to secure cleanliness, and no places of retirement for children of either sex, when performing the most private offices of nature.

Lest the author should be thought to exaggerate the deficiencies of school-houses as they have been heretofore constructed, and as they are now almost universally found wherever public attention has not been earnestly, perseveringly, and judiciously called to their improvement, the following extracts from recent official school documents are inserted, respecting the condition of school-houses in states where public education has received the most attention.

CONNECTICUT.

Extract *from the "First Annual Report of the Secretary of the Board of Commissioners of Common Schools for* 1838–39.

"In the whole field of school improvement there is no more pressing need of immediate action than here. I present with much hesitation, the result of my examinations as to several hundred school-houses in different parts of the State. I will say, generally, that the location of the school-house, instead of being retired, shaded, healthy, attractive, is in some cases decidedly unhealthy, exposed freely to the sun and storm, and in nearly all, on one or more public streets, where the passing of objects, the noise and the dust, are a perpetual annoyance to teacher and scholar, —that no play-ground is afforded for the scholar except the highway,— that the size is too small for even the *average* attendance of the scholars, —that not one in a hundred has any other provision for a constant supply of that indispensable element of health and life, pure air, except the rents and crevices which time and wanton mischief have made; that the seats and desks are not, in a majority of cases, adapted to children of different sizes and ages, but on the other hand are calculated to induce physical deformity, and ill-health, and not in a few instances (I state this on the authority of physicians who were professionally acquainted with the cases,) have actually resulted in this—and that in the mode of warming rooms, sufficient regard is not had either to the comfort and health of the scholar, or to economy.

That I have not stated these deficiencies too strongly, I beg leave to refer you to the accompanying returns, respecting the condition of school-houses in more than eight hundred districts in the State, and in more than forty particulars in each. These returns were made from actual inspection and measurement of school-houses by teachers and others. An abstract of them in part will be found annexed, together with extracts from letters received from school officers on the subject. I might accumulate evidence of the necessity of improvement here for every district in the State. Without improvement in many particulars which concern the health, the manners and morals of those who attend school, it is in vain to expect that parents who put a proper estimate, not only on the intellectual, but the physical and moral culture of their children, will send to the district school.

The following extracts are taken from official documents, published in 1846 and 1847, and fair specimens of the manner in which school-houses are spoken of, in the reports of local committees, from different parts of the State.

"In one district the school-house stands on the highway, with eighty pupils enrolled as in attendance, in a room nineteen and a half feet square, without any outbuildings of any kind.

In another in the same town, the school-house is less than seven feet high, and the narrow slab seats are twenty-one inches high, (four inches higher than ordinary chairs.) The walls, desks, &c., are cut and marked with all sorts of images, some of which would make heathens blush.

In another, the room is fourteen feet square, and six feet five inches high. The walls are very black."

"In this town there is one of the most venerable school servants in the State. The room is small, and less than seven feet high. Slab seats extend around three sides of the room, and are too high for men. The skill of several generations must have been expended in illustrating the walls with lamp smoke and coal images. The crevices of the floor will admit any quantity of cold air. The door sill and part of the house sill have rotted away. The day I visited it, the teacher and pupils were huddled around the stove."

"In one district, the house stands near the travelled road, is low and small, being only seventeen feet by seventeen, and seven feet two inches high, for the accommodation of sixty or seventy pupils. The seats on the outside are from seventeen to eighteen inches. The walls, door, and sides of the house are disfigured with obscene images."

"There are only three good school-houses in the society; only three that have any out-houses. The rest of the school-houses are in a miserable condition. One is thirty-five or forty years old. Most of them have only slab seats, with the legs sticking through, upwards, like hatchel-teeth, and high enough to keep the legs of the occupants swinging. They are as uncomfortable to little children as a pillory. Seats and desks are adorned with every embellishment that the ingenuity of professional whittlers can devise."

"Two of our school-houses, those in the two largest districts, are in a bad condition, old, unpainted and inconvenient. They are built and constructed *inside* on the old Connecticut plan. Only one row of desks, and that fastened to the wall of the school-room, running quite around it; and long forms, without backs to rest on, the scholars sitting with their backs to the centre of the room. The other two are in better condition, though one is constructed on the same plan as above. The out-buildings are in bad condition generally. One school-house has no out-building nor wood-house. One school-house only is painted outside."

"Of the nine school-houses in this society, not one is really what they all ought to be, for the morals, health, and intellectual improvement of the pupils. Four of them are considered tolerably good, having one out-building, the other five are hardly passable. The desks in most or all of them are where they never ought to be, against the sides of the room and against one end, and with few exceptions, all of a height, with poor accommodations for loose clothes, hats, &c.; all located on or near some highway; no play-ground attached to any of them, except the highway."

"A part of our school-houses are comfortable buildings, but destitute of every thing like taste or ornament in the grounds, structure, or the furniture of the rooms. Being generally built in the public highway or close by its side, they are, one and all, without enclosures, ornamental or shade trees. But the want of ornament is by no means the greatest defect of our school-houses; a majority of them are not convenient. Although there has been some improvement in those recently built, yet they are not so good as would be desirable. The out-buildings in too many cases are in a neglected condition, and in some districts are not provided at all, indicating an unpardonable neglect on the part of parents and guardians."—*East Windsor.*

"It appears that a great proportion of the school-houses are in a sad condition and of bad architecture. Architectural drawings should, therefore, be scattered over the state, so that in the buildings to be erected those abominations may be avoided which are now so abundant."—*Glastenbury.*

"The internal construction of most of our school-houses is bad, and occasions great inconvenience and hindrance to the prosperity of our schools. Let as much be done as can be, to remove those miserable prison-houses for our children, and in their stead let there be good, large, and convenient school-houses."—*Suffield, 2d.*

"None of our school-houses have play-grounds attached; they generally stand in the highway, and some on a corner where several roads meet."—*Bethany.*

"Another evil is the poor, cold, inconvenient and gloomy school-houses which we find in many districts. There is one in this society not more attractive than a barn, for comfort and accommodation in a cold day: the best I can say about it is, it is thoroughly ventilated."—*Lebanon, 4th.*

"The houses and the internal arrangement are inconvenient; a slanting board the whole length of the house for a desk, and a slab-board for a seat so high that the scholars cannot reach the floor with their feet, constitute the conveniences of half of the schools in this society."—*Easton.*

"We see many a school-house which looks more like some gloomy, dilapidated prison, designed for the detention and punishment of some desperate culprit, than a place designed for the intellectual training of the children of an enlightened and prosperous nation. Instead of being rendered pleasant and attractive to the youthful mind, they are almost as cold and cheerless as an Indian wigwam."—*Chaplin.*

"Many of our school-houses are in a miserable condition, possessing less attractions outwardly than our prisons, while within they are dark, gloomy and comfortless. They are all destitute of an appearance of any out-house."—*Warren.*

"The general plan of all the school-houses is the same. Writing desks are placed around the room against the walls; these are generally so high that it would be inconvenient for adults, much more for children to use them. The seats stand in front of these, so that the pupil has his option to sit with his face or his back to the teacher. In the former case, he has the edge of the writing desk to support his back; in the latter, nothing. An arrangement like this is the worst possible. Of the five school-houses in the society, two may be warmed so as to be comfortable at all times; a third needs nothing but a good stove; but the remaining two cannot be made fit for a school to occupy without thorough repairs. There is but one out-building of any kind connected with the school-houses of this society, and this is entirely unfit for use."—*Winchester.*

"Throughout Middlesex county the school-houses, taken as a whole, are several degrees below respectability—rarely ever painted within or without, and if painted at all, they ever afterward show a worn and weather-beaten coat, like the half starved, half clothed outcast of society. Yet these houses are owned by the public, worth its tens of thousands, and they groan grievously if a small tax is levied to improve them. Of the four locations of school-houses in this town, not one has sufficient land for a private dwelling, and all the land combined would be less than an acre. One stands wholly on the highway; another stands on a bleak and rocky elevation, and during some portions of the winter, almost inaccessible. This location was chosen probably because it was cheaper than the pleasant field on the opposite side of the way. Why should the public school-house which accommodates from thirty to fifty pupils, ten and eleven months in the year, five and a half days of each week, not require as much land as a church or private dwelling?"—*Chester.*

"Our school-houses are not what they ought to be either in their location or construction. In their location they are generally found upon some barren knoll, or too near the highway, forming part of the fence between the highway and the adjoining proprietor, alike destitute of ornament or shade calculated to render them pleasing or attractive. The desks are almost always too high and continuous, instead of single, nor is there generally a gradation in reference to the size of the scholar. Few school-rooms are well ventilated; not more than one or two properly or healthfully warmed; the consequence is unnecessary frequency of colds, headaches and ill health."—*Tolland.*

The Superintendent (Hon. Seth P. Beers) of Common Schools, thus introduces the subject in his Annual Report for 1848.

"The reports of school visitors from every part of the state speak in strong terms of condemnation of the deplorable condition of many district school-houses. The progress of renovation and improvement in this department has not been as rapid or as thorough, during the past year, as in other sections of New England, or as the true interests of the common schools imperiously demand. Badly located school-houses still "encumber the highway,"—"without shrub or shade-tree around,"—"without play-ground, yard, or out-house, mat or scraper,"—without means of ventilation and uniform temperature,"—"with seats too high and destitute of support for the back,"—"with desks attached to three sides of the room," "with windows destitute of glass,"—"clapboards hanging loose,"—"blinds propped up to be kept in their places,"—"the wood without shelter," and "the stove without a door." These are specimens of the language used by school visitors in describing the places where the children of Connecticut are receiving their early training in taste, manners, morals, and health,—language which it is hoped will touch the pride of the districts, and lead to some efficient action on the subject."

"How surprising and disgraceful is the fact, that a very large proportion of the school-houses of our state present vastly fewer attractions, in point of comfortable arrangement and tastefulness, than are seen about our poor-houses, our jails, and our state penitentiary! This remark is too true of the school-houses in this society. They are all located directly on the road or in it, with hardly a shrub or shade-tree around any one of them; and with no play-ground except the highway, which the children, in several districts, have to share in common with geese and swine. Of their external condition nothing very creditable or gratifying can be said. Six, of the nine school-houses in this society, are wooden ones, and they generally bear a time-honored, weather-beaten aspect. Unpainted and blindless, with clapboards agape to catch the winds of winter, and window-panes rattling, or fallen from the decayed sash, they present a most forlorn and gloomy aspect, which, to say the least, is not very well suited to woo the youthful mind, and fill it with pleasant fancies. One, unacquainted with their original design, might mistake them for the abodes of the evil genii, which would naturally be supposed to haunt the dreary solitudes which surround them.

The internal condition of these school-houses is in perfect keeping with the external. In several of them, the plastering is broken and missing, to say nothing of the dark and dingy color of what remains. The stoves are smoky, and the benches and desks are so high as to be better adapted to the children of a race of giants, than to those of the present generation; and these are hacked and gashed by the pupils, as if in retaliation for the torture suffered from them. My compassion has been deeply moved as I have frequently entered these abodes of suffering, and seen their unhappy inmates—the children of protestant parents—doing penance upon their high seats, with no support to their backs but the soft edge of the projecting board which forms the desk, and with their feet dangling in mid-air several inches from the floor. And when I have looked upon these youthful sufferers, thus seated and writhing with pain, the question has often arisen in my mind, what have these ill-starred children done that they should be doomed to so excruciating torture? What rank offenses have they committed that they should thus be suspended between the heavens and earth for six hours each day? And from deep-felt pity for the innocent sufferers, I have sometimes wished (perhaps it was cruel) that their parents had to sit for one hour in a similar position, that they might learn how to pity their children, and be prompted to attend to their health and comfort in the internal arrangement of the school-room.

Add to all this the fact, so outrageous to common decency, that most of these school-houses have no out-buildings whatever attached to them; and does not the case appeal movingly to the friends of humanity, and demand prompt and decisive measures of reform? Is it not passing strange, that while many parents incur considerable expense in providing themselves with cushioned and carpeted slips in church, where they ordinarily spend, perhaps, but three hours each week, they should be so utterly regardless of the comfort and happiness of their offsprings in the school-room?"—*Bloomfield.*

"Three of the houses are located in the highway; an excellent device for saving land, but a miserable one for the comfort, safety and improvement of children. In selecting sites for the new houses, recently erected, a good degree of space fronting was provided for. Only two houses have blinds or shutters; all the others give full scope for the sun to see what is going on in the school-room, often to the manifest annoyance of the children and teacher; unless, perchance, the latter has genius enough to convert a stray newspaper, or some other available article, into a temporary curtain to shut him out."—*Manchester.*

"Our school-houses, though not cold and leaky, are very badly constructed within, and are therefore very inconvenient. Two of them stand mostly in the highway, so that one passing in a carriage or on horseback may look in upon the whole school, and as a matter of course the scholars will look at whatever passes. When the school-house is so exposed, it would seem, that *modesty* in our children would require the convenience of good out-houses; but this is not the case with any two school-houses in the town. We have urged the importance of these things, but with poor success."—*Suffield, 2d.*

"There are some houses unfit for their purpose; the weather-boards are starting off, "and the wind enjoys quite freely the luxury of coming in and being warmed by the fire; and the dear children suffer much between a cold northwester and a red-hot stove." It is very common to find the school-houses mutilated by the cuttings of obscene figures; this should draw forth the unqualified censure of proprietors and teachers. Further, there are cases where there are no out-houses for the use of children. This is a sore evil, and ought to be remedied immediately."—*Groton.*

"Among the ten school-houses in this district are several very good buildings; but, taking in view the size and proportions of the edifices, the internal arrangement, the fitness of the seats and desks for the object designed, we feel impelled to say, that in our opinion there are no very good school-houses. In some of the districts it is said the people are obliged to go among strangers to procure teachers, on account of the shabbyness of the school-houses."—*Brooklyn.*

"Not more than one-half of our school-houses in this society are very good, if, indeed, they can be termed more than comfortable. The remainder are bad, some of them very bad, exhibiting nothing of comfort or convenience. In some of them, there are no desks fit to be used for writing purposes. The seats are so constructed as to afford no place to rest the back, or, in some cases, even the sole of the foot. Many of the schools are destitute of out-houses. Some of them have no conveniences for hanging up the hats or clothes of the children, or even to shelter the wood from the weather. And more than half our school-houses are destitute of black-boards, a fact alike discreditable to the district and to the teachers who have served in them."—*Stafford, 1st.*

"It appears from the superintendent's report for 1847, that of 1663 school-houses in the state, 873 have out-houses, and 745 have none! This fact is, undoubtedly, a burning shame and a deep disgrace to the state. It is unworthy of a civilized country, and indicates a state of things that ought to exist only among savages. The committee are happy to say that we have little or no share in this shameful fact: but our school-houses are by no means what they should be, and call for improvement.

They are generally *on* or *in* the street, whereas every building devoted to such a purpose ought to be in a retired situation, with suitable yards for play-grounds, and convenient fixtures. The windows in some do not let down from the top, and therefore are not properly ventilated. In only two out of eight school-houses are the benches what they should be. Large desks running around the room for the older scholars ought to be wholly discarded as intolerable nuisances. The scholars are of necessity always looking into the street; the windows can be opened only by climbing over the benches and desks. The scholars' backs are turned toward the teacher; they sit close together, and of course are often whispering. Large girls can leave their seats only by placing their feet on a level with their hips, which it is not always best that females should do. The smaller benches often have backs that are so *low* as to be of little service. Every school-house ought to be provided with a single desk for each pupil, and every pupil ought to have a slate and books to keep in the desk."—*Vernon.*

The following extracts are taken from the Annual Reports for 1849.

"The *school-houses* are not what they should be. Some of them are decidedly bad. They are neither convenient nor pleasant. The benches and desks are inconvenient. Some of the small scholars are reduced to the miserable necessity of swinging in the air, without being able to either get a foothold or a place to rest their backs against. *Ventilation* is not attended to. Every school-room should be so constructed that it can be freely ventilated, so that the scholars may have pure atmospheric air to breathe. This every one must appreciate, who knows the value of health, and does not wish to see a generation of sickly drones coming on to the stage. As a general thing, the external appearance of the school-houses is bad. A stranger passing through a district, can easily select the school-house. If you see a very unique-looking building, a "squatter" in the highway, or standing by permission on the side of some lot, in a corner rendered useless by a location on the border of some swampy moor, or on some arid field, where no vestige of life is—*that* you may conclude is the district school-house. *That* is the place where our children are to resort, during three-fourths of the first sixteen years of their lives, to get an education. *Such* are the associations with their early, perhaps *all* their education! Why is not the district school the place where correct taste should be demonstrated? Impressions *will* be made, and if they ever yield to good taste, school-house associations, in their present state, will not deserve the credit."—*Enfield.*

"Our school-houses are in a bad condition. Look into the school some warm, comfortable day, when the children are more likely to be in attendance, and if you please, walk in and breathe a specimen of the air in a New England unventilated school-house. If you are a well-bred man, you must do violence to your kind feelings, when you take a seat and look around and find that the teacher has nothing left for his accommodation but a standee; our school-houses are literally jammed full, i. e. the seats—any attempt at improvement is voted down on account of the cost."—*South Windsor, Wapping.*

"One district, for a wonder, occupied a new school-house; but while it is *excellent, compared with the old one*, it is *contemptible*, if not *wicked*, compared with what it *ought* to be. The only plan about it seems to be, the *minimum scale of expenditure.* Its dimensions are too limited even for so small a school. The desk or counter is uniform, and attached to three sides of the room, and almost out of *the tallest scholar's reach!* I have protested to the district, and possibly they will lower the counter, *some time or other.* The other districts *need* new school-rooms, and some *talk* of building."—*Wolcott.*

"In regard to the school-houses in our five districts, only one can be said to be very good. Another, recently repaired, may be called good in a qualified sense; while the remaining three are quite ordinary, if not bad. This neglect to provide neat and comfortable school-houses, doubtless has a tendency to dampen the ardor of children in literary pursuits, and in various ways to retard their progress."—*Plainfield.*

"The school-room in the third district presents the same unsightly appearance which it has in years past; and from the height to which the writing desks, and slabs used for seats, are elevated, some persons would naturally infer that they were originally designed for a race of giants."—*Pomfret, Abington.*

"Most of the school-*houses* are in a bad condition, being old, ill-constructed, and inconvenient. Especially is this the case with regard to the interior of some of them, the seats of which are too high for the comfort of the scholars, with nothing to rest the back against, except the sharp edge of a plank or board, which serves as a writing desk, and this placed so high as to bring the arm to an unnatural and uneasy position when attempting to write. The school-houses, too, with one or two exceptions, stand in the highway, many within a few feet of the traveled path, with windows looking directly upon it, so that the attention of the scholar is necessarily attracted to every passer-by, thus diverting his attention from his studies, retarding his progress, and annoying his teacher."—*Litchfield, Milton.*

The Annual Report of the Superintendent of Common Schools for 1850 contains the following remarks on the condition of the school-houses.

"If any reliance can be placed on the representations made by teachers and school visitors from two hundred and four out of the two hundred and seventeen school societies in the state, as collected from written communications to this department in the course of the last four years, a majority of our school-houses are badly located, badly ventilated, imperfectly warmed in winter, having uncomfortable seats and desks, without apparatus except a black-board, and destitute of the most ordinary means of cleanliness and convenience. To this overwhelming mass of testimony (Appendix G) as to the necessity of immediate and thorough improvement in this portion of the educational field, I will here add an extract from a communication by a teacher of much experience and distinction, who received his education and commenced his experience in teaching in the district schools of this state. His remarks refer to the condition of school-houses in a single county—to three-fourths of which he had just made a personal visit."

"OLD SCHOOL-HOUSES.—These are the Antiquities of Connecticut, rude monuments of art, that must have had their origin coeval with the pyramids and catacombs, for aught we can learn to the contrary, save by the uncertain information of tradition. "It always stood there," says "the oldest inhabitant," when asked the date of the erection of one of them. Little brown structures of peculiar aspect, meek, demure, burrowing in some lone, damp and depressed spot, or perchance perched on the pinnacle of a rock, as if too contemptible and abject to occupy a choice piece of earth,—exposed to the remorseless winds of winter, and the fervid rays of summer,—at one end a narrow and dingy entry, the floor covered with wood, chips, stones, hats, caps, odd mittens, old books, bonnets, shawls, cloaks, dirt, dinner baskets, old brooms, ashes, &c., all thrown together in the order as here catalogued,—the principal room retaining its huge stone chimney, which for generations boasted its ghastly fire-place, affording a ready oblivion to annual piles of green and snow-soaked wood,—the burnt, smoked, scratched and scrawled wainscoting,—the battered and mutilated plastering,—the patched windows,—the crippled and ragged benches,—the desks which have endured a short eternity of whittling,—the masses of pulverized earth in constant agitation, filling the throat, eye and nostrils of the inmates,—the unmistakable compound of odors which come not from "Araby the blest"—all point to the remote antiquity of these buildings, and intimate the veneration in which they are held. That some of these structures are always to remain, does not seem to admit of a "reasonable doubt." The records of their origin, as we have seen, are gone, and the testimony of the past few generations is conclusive that no change has been effected in their appearance from a remote period; hence the deduction that they are among the "things to remain," and never to pass away. Though the "annual miracle of nature" may not be vouchsafed to preserve them, yet, like the monuments of the American Indians which receive their annual votive offering of stones, and are thus rendered imperishable, so these "antiquities," receiving their semi-occasional patches upon windows, upon clapboards, roofs and floors, together with the autumnal embankment of earth around their base, and all these given and received obsequious to the *annual solemn* votes of the district,—stand, despite the advance of public opinion, the "war of elements," and "the tooth of time."

MODERN SCHOOL ARCHITECTURE.—It is much to be regretted that a work similar to "Barnard's School Architecture" had not been issued and circulated throughout the state some ten years ago, that such as have since that time erected new houses, (that are to stand forever,) might have consulted approved models for the size and forms of their structures, and improved plans for their internal arrangements. It would seem, however, that enough had been said by the author of that work in his annual reports, and occasional addresses in the state, to have excited interest sufficient in those intending to build new houses, to extend their inquiries and observations beyond the limits of their own district, and beyond the pattern of their own recently condemned school-house, and at least to select suitable locations for houses and necessary out-buildings, if not for a yard and play-ground.

The material changes observed in the construction of new houses about the county, consist in placing the *end* of the building toward the street instead of the *side*, and giving a very narrow entry across the end of the building,—affording, in some instances, two entrances into the school-room, with only one into the entry. A portion of the entry is used for wood, which being thrown against the plastering, lays bare the lathing, making the building, while yet new, bear the tokens of age. In a few instances only have two outside doors been observed, giving separate entrances to boys and girls.

In most instances where the building is not erected on the line of the highway, it is placed only so far back as to allow a straggling wood pile just outside the traveled path. An instance is not now remembered where the generosity of the district has given a play-ground to the school, aside from the *public common* or the *traveled highway*.

The internal arrangements of the new houses are, in *many instances*, exactly like those of their immediate predecessors, save that in all cases it is believed the old movable slab benches, are superseded by permanent benches with backs. The windows, in all cases perhaps, in the new houses, have made a sensible step *downward* toward the floor; and the desks and seats of the larger scholars, have also been brought down from their inconvenient and dizzy heights, that their occupants may not be "while *in*, above the world."

Where change has been wrought in the fixtures of the room, the desks are almost always clumsy, occupying unnecessary portions of the room, and rendering them inconvenient for the evolutions of the school.

Ventilation has received a passing thought in the erection of most of the new houses, yet its importance is not probably fully appreciated, nor the best methods of securing it clearly understood. Some ventilate from the windows so successfully, as to part with the warm air almost entirely, and at the same time to retain the offensive gases and odors of the room. Some ventilators are placed in the ceiling in the corners of the rooms, others are placed immediately over the stove pipe,—some are movable, and moved with a cord,—others are simply a scuttle, expected to rise by the expansive power of the gases, as safety valves of engines operate by accumulation of steam.

The substitution of stoves (mainly box stoves,) for the engulphing fire place, as a means of warming school-rooms, is noticed in the new houses.

OF SCHOOL-HOUSES GENERALLY.—To ascertain if improvement has been effected in this class of structures in the state, we must resort to one or two devices of the astronomer, in observing the motions of the heavenly bodies, viz., to notice their respective positions at different and remote periods of time. The progress of improvement has been so slow, (if improvement has been made in school-houses,) that an observer from year to year only, might be at a loss to know that such was the fact; but a comparison of the structures fifteen or twenty years ago, with the buildings now occupied for schools, will doubtless enable one to say that *progress has been made.* It is stated on very creditable authority that in *some* societies and some towns, *one*, and in some instances, more *than* one house has been built, and one or more has been *painted.*

The contributions upon old hats, upon writing books that are "writ through," &c., &c., are levied less frequently than formerly to repel the winds at the windows; fewer clapboards are now seen swinging gaily by a single nail, than in bye-gone days; the asthmatic wheezing of the winds through the uncounted apertures is hushed, and the pupils enjoy an irrigation through the roof less frequently than formerly. Curtains are occasionally found to protect the eyes of the pupils from the blinding rays of the sun; the comfort of the smaller children is materially increased by the addition of backs to their hard seats; the desks and seats of the larger pupils have descended toward the floor; the use of stoves giving a comfortable temperature to the rooms, instead of the former equatorial heat and the polar cold; in rare instances the ingenious designs in chalk and charcoal upon the walls and ceiling have retired behind a coating of whitewash, and the yawning fire-place has been plastered over. All these movements distinctly indicate that vitality at least exists among the people of this commonwealth, and that *the best good of their children, as they tell us, lies nearest their hearts.*

It is earnestly hoped that all persons will be open to conviction and receive the above statement of facts as a perfect demonstration of the earnestness of the community for the well being of the schools.

When we come to the *et ceteras* of the school-rooms, such as shovel and tongs, brooms, brushes, bells, globes, sinks, wash-basins, towels, pegs, hooks and shelves for hats, clothing, &c., it is feared such great, such momentous changes, such rapid advances, will not appear to have been made; probably not three districts in the county have gone so fast, or so far in advance of the others as to have procured all these articles; probably not more than half a dozen districts have supposed it important, that even a mat and scraper are necessary for pupils to use after walking, perhaps a mile in the mud; yet we should be doing them injustice in not supposing that they really feel this quenchless interest, which they represent themselves as possessing for their children, and should greatly misjudge them if we supposed them not doing all in their power to encourage their children in obtaining useful knowledge, and in cultivating the minor virtues while in school.

Out-buildings.—An appalling chapter might be written, on the evils, the almost inevitable results of neglecting to provide these indispensable appendages to school-houses in our state. Who can duly estimate the final consequences of the first shock given to female delicacy, from the necessary exposure, to which the girls in the public schools are inevitably subjected; and what must be the legitimate results of these frequent exposures during the school-going years of youth? What quenchless fires of passion have been kindled within the bosom of the young of both sexes by these exposures, fires that have raged to the consuming of personal happiness, to the prevention of scholastic improvement, and to the destruction of personal character? again, what *disgust* has been created in both sexes by the results of not having the appropriate retirements which nature imperiously demands? and finally, may not the disinclination, the aversion of large numbers of families, of mothers especially, to sending their daughters to the public schools, have been created by the sufferings they themselves have endured, from the above cause; and an unwillingness to subject the delicacy of their daughters to the obnoxious trial? Were the question not so peculiar as almost to defy examination, it is apprehended this would be found to be the truth. Will it not seem incredible, even to Connecticut men, to be informed that less than one-half of the school-houses in this commonwealth are without these necessary buildings? yet such is probably the fact; thus dooming thousands of girls to bear a loathsome burden of mortification, which they cannot remove without withdrawing from the schools. I have no *exact* data for the above estimate, yet it is probably not far below the truth, if indeed it is at all. So filthy are *most* of those that are provided, that they are not only quite useless, but disgusting in the extreme. In one society of nine schools but one out-house was provided, and that, I was informed, could only be reached in *dry* weather, such was its *location;* nor could it be used even then, such was its *condition.* This state of things, it would seem, should be utterly changed, and that speedily."

MASSACHUSETTS.

Extracts *from the "Report of the Secretary (Hon. Horace Mann) of the Board of Education for* 1846."

"For years the condition of this class of edifices, throughout the State, taken as a whole, had been growing worse and worse. Time and decay were always doing their work, while only here and there, with wide spaces between, was any notice taken of their silent ravages; and, in still fewer instances, were these ravages repaired. Hence, notwithstanding the improved condition of all other classes of buildings, general dilapidation was the fate of these. Industry and the increasing pecuniary ability which it creates, had given comfort, neatness, and even elegance to private dwellings. Public spirit had erected commodious and costly churches. Counties, though largely taxed, had yet uncomplainingly paid for handsome and spacious court-houses and public offices.

In 1837, not one third part of the Public School-houses in Massachusetts would have been considered tenantable by any decent family, out of the poor-house, or in it. As an incentive to neatness and decency, children were sent to a house whose walls and floors were indeed painted, but they were painted, all too thickly, by smoke and filth; whose benches and doors were covered with carved work, but they were the gross and obscene carvings of impure hands; whose vestibule, after the oriental fashion, was converted into a veranda, but the metamorphosis which changed its architectural style, consisted in laying it bare of its outer covering. The modesty and chastity of the sexes, at their tenderest age, was to be cultivated and cherished, in places, which oftentimes were as destitute of all suitable accommodations, as a camp or a caravan. The brain was to be worked amid gases that stupefied it. The virtues of generosity and forbearance were to be acquired where sharp discomfort and pain tempted each one to seize more than his own share of relief, and thus to strengthen every selfish propensity.

At the time referred to, the school-houses in Massachusetts were an opprobrium to the State; and if there be any one who thinks this expression too strong, he may satisfy himself of its correctness by inspecting some of the few specimens of them which still remain.

The earliest effort at reform was directed towards this class of buildings. By presenting the idea of taxation, this measure encountered the opposition of one of the strongest passions of the age. Not only the sordid and avaricious, but even those, whose virtue of frugality, by the force of habit, had been imperceptibly sliding into the vice of parsimony, felt the alarm. Men of fortune, without children, and men who had reared a family of children, and borne the expenses of their education, fancied they saw something of injustice in being called to pay for the education of others; and too often their fancies started up into spectres of all imaginable oppression and wrong. The school districts were the scene where the contending parties arrayed themselves against each other; the school-house itself their arena. From time immemorial, it had been the custom to hold school district meetings in the school-house. Hither, according to ancient usage, the voters were summoned to come. In this forum, the question was to be decided, whether a new edifice should be erected, or whether the ability of the old one to stand upon its foundations for another season, should be tried. Regard for the health, the decent manners, the intellectual progress and the moral welfare of the children, common humanity, policy, duty, the highest worldly interests of the race, were marshalled on one side, demanding a change; selfishness, cupidity, insensibility to the wants and the welfare of others, and that fallacious plea, that because the school-house had answered the purpose so long, therefore it would continue to answer it still longer,—an argument which would make all houses, and roads, and garments, and every thing made by human hands, last forever,—resisted the change. The disgraceful contrast between the school-house and all other edifices, whether public or private, in its vicinity; the immense physical and spiritual sacrifices which its condition inflicted upon the rising generation, were often and unavailingly urged; but there was always one argument which the advocates for reform could use with irresistible effect,—the school-house itself. Cold winds, whistling through crannies and chinks and broken windows, told with merciless effect upon the opponents. The ardor of opposition was cooled by snow-blasts rushing up through the floor. Pain-imparting seats made it impossible for the objectors to listen patiently even to arguments on their own side; and it was obvious that the tears they shed were less attributable to any wrongs which they feared, than to the volumes of smoke which belched out with every gust of wind from broken funnels and chimneys. Such was the case in some houses. In others, opposite evils prevailed; and the heat and stifling air and nauseating effluvia were such as a grown man has hardly been compelled to live in, since the time of Jonah.

Though insensible to arguments addressed to reason and conscience, yet the senses and muscles and nerves of this class of men were less hardened than their hearts; and the colds and cramps, the exhaustion and debility, which they carried home, worked mightily for their conversion to truth. Under such circumstances, persuasion became compulsory.

Could the leaders of the opposition have transferred the debate to some commodious public hall, or to their own spacious and elegant mansions they might have bid defiance to humanity and remained masters of the field. But the party of reform held them relentlessly to the battle-ground; and there the cause of progress triumphed, on the very spot where it had been so long dishonored.

During the five years immediately succeeding the report made by the Board of Education to the Legislature, on the subject of school-houses, the sums expended for the erection or repair of this class of buildings fell but little short of *seven hundred thousand dollars.* Since that time, from the best information obtained, I suppose the sum expended on this one item to be about *one hundred and fifty thousand dollars annually.* Every year adds some new improvement to the construction and arrangement of these edifices.

In regard to this great change in school-houses,—it would hardly be too much to call it a *revolution,*—the school committees have done an excellent work,—or rather, they have begun it;—it is not yet done. Their annual reports, read in open town meeting, or printed and circulated among the inhabitants, afterwards embodied in the Abstracts and distributed to all the members of the government, to all towns and school committees have enlightened and convinced a State.

Notwithstanding the great *revolution* actually wrought in the condition of school-houses in certain villages and cities of Massachusetts, the following picture of these buildings in the rural towns is drawn by Mr. Leach, one of the agents of the Board of Education, in 1853:

> Since the commencement of my agency, I have examined more than one thousand school-houses, and have noticed the following defects in their location and construction. I have found very many school-houses situated in the highways, but a few feet from the traveled road, and without any yard for the scholars to play in. Some I have found in wet and marshy places, which were often surrounded by standing water. Some were quite near ponds or streams, which was the cause of very great annoyance, both in summer and winter. Some were near stores and public places of resort, which were frequently visited during the intermission. Some were near workshops, or manufactories, or railroads, or depots, exposing the children to interruption and accidents. Some were on eminences, surrounded by dangerous declivities. Not one in fifty have I found with suitable backyards, well-fenced, and with decent water closets. But very few have two entrances, one for each sex. In consequence of this arrangement, teachers are compelled to sacrifice thirty minutes each day, one-twelfth of the whole school time, or commit the gross impropriety of sending out boys and girls into the same yard at the same time. Very few houses are constructed with any regard to external beauty or internal convenience. Many are quite too small, not affording, in some instances, more than forty or fifty cubic feet to each pupil, instead of one hundred and fifty, which is regarded as the minimum. Very many are not more than eight feet in height, instead of eleven or twelve feet. A very common and serious defect is the want of good blackboards, placed at the proper height. In very many cases, instead of a blackboard in the rear of the teacher's desk, there is a window to admit light directly in the face of the pupils. In many houses of recent construction there are no blackboards, except in the rear of the pupils, so

that they were obliged to stand or sit on the top of the desks to witness any illustration from the teacher. Where such arrangements existed, I found that but very little use was made of the blackboard by the teacher. Very many schools I have found badly lighted, some admitting too much light, and others too little, and quite often the light was admitted directly in the faces of the pupils. In consequence of too little light, the pupils become short-sighted, and contract a stooping posture by bringing the head near the book. The cases are quite numerous where pupils have become short-sighted and round-shouldered, by being compelled to study in an improper posture. By an excess of light, the sight of pupils has been very much impaired, and, in some cases, entirely lost.

In a large majority of cases, the stairs leading to the upper rooms have been badly constructed, endangering the lives and limbs of pupils. Very many cases of serious injury I have found, which have resulted from this cause. But very few houses are furnished with large closets, or book-cases, to preserve maps, globes, and books of reference. But few are provided with a well, pump, and sink, a very necessary appendage to every good school. In but few instances have there been any attempts to beautify the grounds, by setting out trees, shrubbery, &c. Globes, clocks, thermometers, mats and scrapers, have not been introduced extensively into the country schools. In school districts in the country, when the pupils live some distance from the school, there is seldom any provision for the pupils who wish to stop at noon, or who come in the morning before the time of commencing the school. Many houses have been built, and some recently, with large rooms, containing from one hundred to two hundred pupils each. I have made it a particular point of inquiry to ascertain the advantages and disadvantages of large rooms, as compared with small ones. I have consulted more than one hundred experienced teachers on this subject, and have found but four or five who do not much prefer small rooms to large ones.

In all my examination, I have found but few houses well ventilated. In a large majority of cases, there are no means of ventilating but by opening the windows and doors. And where attempts have been made, it has been but imperfectly accomplished. The ventilating tubes have almost invariably been too small.

NEW-YORK.

EXTRACT *from the "Annual Report of the Superintendent (Hon. Samuel Young) of Common Schools, made to the Legislature, January* 13, 1844."

"The whole number of school-houses visited and inspected by the county superintendents during the year was 9,368: of which 7,685 were of framed wood; 446 of brick; 523 of stone, and 707 of logs. Of these, 3,160 were found in good repair; 2,870 in ordinary and comfortable repair, and 3,319 in bad repair, or totally unfit for school purposes. The number furnished with more than one room was 544, leaving 8,795 with one room only. The number furnished with suitable play-grounds is 1,541; the number not so furnished, 7,313. The number furnished with a single privy is, 1,810; those with privies containing separate apartments for male and female pupils, 1,012; while the number of those not furnished with *any privy* whatever, is 6,423. The number suitably furnished with convenient seats, desks, &c., is reported at 3,282, and the number not so furnished, at 5,972. The number furnished with proper facilities for ventilation is stated at 1,518; while the number not provided with these essential requisites of health and comfort is 7,889.

No subject connected with the interests of elementary instruction affords a source of such mortifying and humiliating reflections as that of the condition of a large portion of the school-houses, as presented in the above enumeration. One-third only of the whole number visited, were found in good repair; another third in ordinary and comfortable condition only in this respect—in other words, barely sufficient for the convenience and accommodation of the teachers and pupils; while the remainder, consisting of 3,319, were to all intents and purposes unfit for the reception of man or beast.

But 544 out of 9,368 houses visited, contained more than one room; 7,313 were destitute of any suitable play-ground; nearly six thousand were unfurnished with convenient seats and desks; nearly eight thousand destitute of the proper facilities for ventilation; and upwards of six thousand without a privy of any sort; while of the remainder but about one thousand were provided with privies containing different apartments for male and female pupils! And it is in these miserable abodes of accumulated dirt and filth, deprived of wholesome air, or exposed without adequate protection to the assaults of the elements, with no facilities for necessary exercise or relaxation, no convenience for prosecuting their studies; crowded together on benches not admitting of a moment's rest in any position, and debarred the possibility of yielding to the ordinary calls of nature without violent inroads upon modesty and shame; that upwards of two hundred thousand children, scattered over various parts of the State, are compelled to spend an average period of eight months during each year of their pupilage! Here the first lessons of human life, the incipient principles of morality, and the rules of social intercourse are to be impressed upon the plastic mind. The boy is here to receive the model of his permanent character, and to imbibe the elements of his future career; and here the instinctive delicacy of the young female, one of the characteristic ornaments of the sex, is to be expanded into maturity by precept and example! Is it strange, under such circumstances, that an early and invincible repugnance to the acquisition of knowledge is imbibed by the youthful mind; that the school-house is regarded with unconcealed aversion and disgust, and that parents who have any desire to preserve the health and the morals of their children, exclude them from the district school, and provide instruction for them elsewhere?

If legislation could reach and remedy the evil, the law-making power would be earnestly invoked. But where the ordinary mandates of humanity, and the laws of parental feeling written by the finger of heaven on the human heart, are obliterated or powerless, all statutory provisions would be idle and vain. In some instances during the past year, comfortable school-houses have been erected to supply the place of miserable and dilapidated tenements which for years had been a disgrace to the inhabitants. Perhaps the contagion of such worthy examples may spread; and that which seems to have been beyond the influence of the ordinary impulses of humanity, may be accomplished by the power of example or the dread of shame.

The expense of constructing and maintaining convenient buildings, and all other proper appliances for the education of the young, is a mere trifle when contrasted with the beneficial results which inevitably follow.

Of all the expenditures which are calculated to subserve the wants or gratify the caprices of man, there are none which confer such important and durable blessings as those which are applied to the cultivation and expansion of the moral and intellectual powers. It is by such cultivation that human happiness is graduated, and that from the most debased of the savage tribes, nation rises above nation in the scale of prosperity and civilization. The penuriousness which has been manifested on this subject, and the reckless profligacy exhibited on others, is strongly characteristic of the past. In future times, when the light of science shall be more widely diffused, and when the education of the young shall claim and receive the consideration it deserves, a retrospection to the records of the past will exhibit preceding generations in no enviable point of view.

The following remarks and extracts from the Reports of the special visiters appointed by the State Superintendent (Hon. John C. Spencer) in each of the counties, for 1840, and for 1841, are taken from Part I of that admirable work, the "School and the Schoolmaster," Part I, by Prof. (now Bishop) Potter, and Part II, by George B. Emerson, Esq., of Boston.

"I ask, then, *first*, are our common schools places of agreeable resort, calculated to promote health, and to connect pleasant associations with study?

Ans. Say the visiters, in one of the oldest and most affluent towns of the south-eastern section of the state, 'It may be remarked, generally that the school-houses are built in the old style, are too small to be convenient, and, with one exception, too near the public roads, generally having no other play-ground.' Twelve districts were visited in this town.—*See Report of Visiters* (1840), p. 47.

Say the visiters of another large and wealthy town in the central part of the state, 'Out of the 20 schools they visited, 10 of the school-houses were in bad repair, and many of them not worth repairing. In none were any means provided for the ventilation of the room. In many of the districts, the school-rooms are too small for the number of scholars. The location of the school-houses is generally pleasant. There are, however, but few instances where play-grounds are attached, and their condition as to privies is very bad. The arrangement of seats and desks is generally very bad, and inconvenient to both scholars and teachers. Most of them are without backs.'—P. 28 (*Rep.*, 1840.)

From another town in the north-western part of the state, containing a large population, and twenty-two school districts, the visiters report of district No. 1, that the school-house is large and commodious, but scandalously cut and marked; the school-room but tolerably clean; the privies very filthy, and no means of ventilation but by opening the door or raising the window. No. 2 has an old school-house; the room not clean; seats and desks well arranged, but cut and marked; no ventilation; the children healthy, but not clean. No. 3 has an old frame building, but warm and comfortable. No. 4 has a very poor, dilapidated old frame school-house, though the inhabitants are generally wealthy for that country. No. 5 has a frame school-house, old and in bad condition; school-room not clean; seats and desks not convenient; No. 6 has a frame school-house, old and in bad condition; the school-room is not clean; no cup or pail for drinking water. No. 7 has a log school-house, in a very bad condition; desks and seats are inconvenient. 'Here, too,' say the visiters, 'society is good, and people mostly in easy circumstances, but the school-house very unbecoming such inhabitants. It does not compare well with their dwellings.' No. 8, say the visiters, is 'a hard case.' No. 9 has a frame house in good condition and in a pleasant location, but is 'too small for the number of children.' No. 10 has a log school-house. No. 11 has a 'log shanty for a school-house, not fit for any school.' No. 12 a log house. No. 13 has a log shanty, in bad condition, not pleasantly located, school-room not clean. 'The school-house or *hovel* in this district is so cold in winter, so small and inconvenient, that little can be done towards preserving order or advancing education among so many scholars; some poor inhabitants and some in good circumstances; might have a better school-house.' No. 14 has a good frame house, in good condition. pleasant location. with ample and beautiful play-ground; school-room in clean condition. The visiters add, 'In this district the inhabitants are poor, and the scholars attend irregularly; *the house was built by one man in low circumstances, who has a large family of boys to educate; a noble act.*' No. 15 has a frame house, in a good, warm, and comfortable condition, with a pleasant and retired location and a play-ground. No. 16 has a log shanty for a school-house. No. 17, 'no regular school-house other than some old log house.' No. 18, no school-house. No. 19, a log shanty. No. 20 and 21 are new districts. No. 22 has a frame school-house, in good repair and pleasantly situated. Thus, out of twenty-two school-houses, not more than *five* are reported as respectable or comfortable; none have any proper means of ventilation; eight are built of logs; and but one of them, according to the visiters, has a privy.—*Report* (1840), p. 142.

It is also a subject of frequent complaint in these reports, that the seats are too high (too high, say the visiters in one case, for a man of six feet, and all alike), and are, therefore, uncomfortable for the children, as well as productive of much disorder. 'We have found,' says the report from one town, 'except in one school, all the seats and desks much too high, and in that one they were recently cut down at our recommendation. In many of our schools, a considerable number of children are crowded into the same seat, and commonly those seated beyond the entering place have no means of getting at their seats but by climbing over those already seated, and to the ruin of all regard to cleanliness.'

'We have witnessed much uneasiness, if not suffering, among the children, from the dangling of their legs from a high seat, and, with the one exception, have seen them attempting to write on desks so high that, instead of the elbow resting to assist the hand in guiding the pen, the whole arm has, of necessity, been stretched out; for, if they did not this, they must write rather by guess than sight, unless some one may have the fortune to be near-sighted, and, from this defect, succeed in seeing his work. This is a great evil, and ought to be remedied before we complain of the incompetency of teachers.'—*Report* (1841), p. 38.

These specimens will serve to show how far many of the school-houses, in this state, are pleasant places of resort, or study, and in what degree they are likely to inspire a respect for education, or a desire to enjoy and improve its advantages. The condition and aspect of the building, with its appendages and surrounding landscape, are inseparably associated, in a child's mind, with his first day at school, and his first thoughts about education. Is it well, then, that these earliest, most lasting, and most controlling associations, should be charged with so much that is offensive? Is it to be expected, that the youthful mind can regard that as the cause, next to religion, most important of all others, which is upheld and promoted, in such buildings, as the district school-house usually is? Among the most comfortless and wretched tenements, which the pupil ever enters, he thinks of it with repugnance; the tasks which it imposes, he dreads; and he at length takes his leave of it, as of a prison, from which he is but too happy to escape.

This seems to me to be the greatest evil connected with our school-houses. But their deleterious effect on health, is also to be considered. Air which has been once respired by the lungs, parts with its healthy properties, and is no longer fit for use. Hence a number of persons, breathing the air of the same apartment, soon contaminate it, unless the space is very large, or unless there is some provision for the introduction of fresh, as well as the exclusion of foul air. This ventilation is especially important for school-houses, since they are usually small in proportion to the number of scholars; the scholars remain together a long whil at once, and are less cleanly in their personal habits than adults. Yet important as it is, probably not one common school in fifty, in this state will be found supplied with adequate means to effect it. The cracks and crevices, which abound in our school-houses, admit quite enough of cold air in winter, but not enough of fresh. What is wanted at that season, for both health and economy, is a constant supply of fresh warm air; and this is easily obtained by causing the air, as it enters from without, to pass through heated flues, or over heated surfaces.

It is also important, to the health of scholars and teachers in common schools, that the rooms should be larger and have higher ceilings; and that much more scrupulous attention should be paid to the cleanliness of both the room and its inmates. 'An evil,' say the visiters of one of the towns, 'greater than the variety of school-books or the want of necessary apparatus, is having school-rooms so unskilfully made and arranged. Of our 13 school-rooms, only 3 are ten feet high, and of the residue only one is over eight feet. The stupidity arising from foul, oft-breathed air, is set down as a grave charge against the capacity of the scholars or the energy of the teacher. A room for 30 children, allowing 12 square feet for each child, is low at 10 feet, and for every additional ten children an extra foot in elevation is absolutely necessary, to enable the occupants of the room to breathe freely.'—*Report* (1841), p. 38.

Are common schools so conducted, as to *promote habits of neatness and order, and cultivate good manners and refined feelings?*

From the quotations already made from the reports of visiters, it appears that the school-rooms, in many cases, were not clean; and the same thing is often alleged of the children. I will add but one other passage, to which I happen to open on p. 39 of the Report (1840). It relates to a town containing 24 school districts, of which 16 were visited. Of these 16, one quarter are represented to have been almost entirely regardless of neatness and order, viz.: No. 4 'has a dirty school-room, and the appearance of the children was dirty and sickly.' No. 2 'has a dirty school-room, inconveniently arranged, and *ventilated all over*;' the children 'rather dirty,' and no means of supplying fresh water except from the neighbor's pails and cups. No. 3 has 'an extremely dirty school-room, without ventilation, the children not clean, and no convenience for water.' No. 24 'has a school-house out of repair, dirty, and inconvenient in its arrangements.'

It is also a subject of almost universal complaint, that the *school-houses are without privies.* On an average, probably not more than one in twenty, of the school-houses throughout the state, has this appendage; and in these, it was almost invariably found, by the visiters, to be in a bad state. This fact speaks volumes, of the attention, which is paid at these schools, to delicacy of manners, and refinement of feeling. None but the very poorest families think of living without such a convenience at home; and a man, who should build a good dwelling-house, but provide no place for retirement when performing the most private offices of nature, would be thought to give the clearest evidence of a coarse and brutal mind. Yet respectable parents allow their children to go to a school where this is the case; and where the evil is greatly aggravated by the fact, that numbers of both sexes are collected, and that, too, at an age of extreme levity, and when the youthful mind is prone to the indulgence of a prurient imagination. Says one of the visiters (*Report*, 1840, p. 77), 'In most cases in this town, the scholars, male and female, are turned promiscuously and simultaneously into the public highway, without the shelter of so much (in the old districts) as a 'stump' for a covert to the calls of nature. The baneful tendency, on the young and pliant sensibilities, of this barbarous custom, are truly lamentable.' So the visiters of one of the largest and oldest counties: 'We regret to perceive that many of the districts have neglected to erect privies for the use of the children at school. This is a lamentable error. The injury to the taste and morals of the children which will naturally result from this neglect, is of a character much more serious than the discomfort which is obviously produced by it.'—(*Report*, 1840, p. 131.)"

VERMONT.

EXTRACT *from the "First Annual Report of the State Superintendent (Hon. Horace Eaton,) of Common Schools, October*, 1846," *made to the Legislature.*

"It might occur to any one in travelling through the State, that our school-houses are almost uniformly located in an uninteresting and unsuitable spot, and that the buildings themselves too generally exhibit an unfavorable, and even repulsive aspect. Yet by giving some license to the imagination it might be supposed that, notwithstanding their location and external aspect were so forbidding, the internal appearance would be more cheerful and pleasant—or at least, that the arrangement and construction within would be comfortably adapted to the purposes which the school-house was intended to fulfil. But an actual inspection of by far the greatest number of the school-houses in the State, by County Superintendents, discloses the unpleasant fact, that ordinarily the interior does but correspond with the exterior, or is, if possible, still worse. A very large proportion of these buildings throughout the State must be set down as in a miserable condition. The melancholy fact is established by the concurrent report of all our County Superintendents, that in every quarter of the State they are, as a class, altogether unsuited to their high purposes. Probably nine-tenths of them are located upon the line of the highway; and as the geographical centre of the district usually determines their situation, aside from the relation with the road, it is a rare chance that one is not placed in an exposed, unpleasant and uncomfortable spot. In some cases—especially in villages—their location seems to be determined by the worth, or rather by the *worthlessness* of the ground on which they stand—that being selected which is of the least value for any other purpose. Seldom or never do we see our school-houses surrounded by trees or shrubbery, to serve the purpose which they might serve so well—that of delighting the eye, gratifying the taste, and contributing to the physical comfort, by shielding from the scorching sun of summer, and breaking the bleak winds of winter. And from buildings thus situated and thus exposed, pupils are turned out into the streets for their sports, and for other purposes still more indispensable. What better results could be expected under such a system than that our 'girls should become hoydens and our boys blackguards?' Indeed it would be a happy event, if in no case results still more melancholy and disastrous than this were realized.

But this notice of *ordinary* deficiencies does not cover the whole ground of error in regard to the situation of school-houses. In some cases they are brought into close connection with positive nuisances. In a case which has fallen under the Superintendent's own personal observation, one side of the school-house forms part of the fence of a hog-yard, into which, during the summer, the calves from an extensive dairy establishment have been thrown from time to time, (disgusting and revolting spectacle!) to be rent and devoured before the eyes of teacher and pupils—except such portions of the mutilated and mangled carcasses as were left by the animals to go to decay, as they lay exposed to the sun and storm. It is true the windows on the side of the building adjoining the yard, were generally observed to be closed, in order to shut out the almost insupportable stench which arose from the decomposing remains. But this closure of windows could, in no great degree, 'abate the nuisance;' for not a breath of air could enter the house from any direction but it must come saturated with the disgusting and sickening odor that loaded the atmosphere around. It needs no professional learning to tell the deleterious influence upon health, which must be exerted by such an agency, operating for continuous hours.

Such cases, it is hoped and believed, are exceedingly rare. But it is much to be feared that the usual exemption enjoyed by teachers and pupils, from even such outrages upon their senses and sensibilities, as have been detailed, is to be attributed to the fact that such arrangements are not ordinarily convenient, rather than to any prevailing conviction o. their impropriety, or any general and settled purpose to avoid them. The case is named as at least strong evidence that the pertinency of considerations, involving a regard either to taste, comfort, or even health itself, is generally overlooked or disregarded, in fixing upon a site for a school-house. At all events these purposes are all *exposed* to be violated under the prevailing neglect of districts to secure the possession of sufficient ground for a yard around the school-house. But it would seem unnecessary to urge, beyond the bare suggestion, the importance of providing for school-houses, a comfortable location, a sufficient yard and play-ground, a wood-house and other out-buildings, a convenient access to water, and the surrounding of the premises with shade-trees which might serve for shelter, as well as delight the eye, and aid to render the school-house—what it should be—one of the most attracting and delightful places of resort upon the face of the earth. It should be such, that when the child shall have changed into the gray-haired man, and his memory wanders back through the long vista of vanished years, seeking for some object on which it may repose, this shall be the spot where it shall love to rest.

In the construction of the school-house—embracing its material, style of architecture, and finish—as little care and taste are exhibited, as might be expected from the indifference manifested in regard to its location and surrounding circumstances. Cheapness of construction seems, in most cases, to be the great governing principle, which decides upon its materials, its form, and all its internal arrangements. No complaint on this score could justly be made, if the general condition of these buildings were clearly and fairly attributed to want of ability. But while our other edifices, both public and private, have improved in elegance, convenience, and taste, with the increasing wealth of our citizens, our school-houses linger in the rear and bear the impress of a former age. In this respect

> 'That which in days of yore we were
> We at the present moment are.'

Low walls might be instanced as *one* of the prevailing defects in school-house architecture. The quantity of air contained in a school-room of the usual height, is so small as to be soon exhausted of its oxygen; and the dullness, headache and depression which succeed to this result, are but too well known and too often felt, although they may fail of being attributed to their true cause. And why should our children be robbed of a comfortable supply of that pure and wholesome air, with which our Creator, in the largeness and richness of his bounty, has surrounded the earth and filled the sky? But if the condition of the house is such, as in part to prevent the injurious effects arising from a deficiency of pure air, by means of broken windows and gaping crevices—then colds. coughs and as the ultimate and crowning result—consumption—

(and of this disease, what thousands of cases have had their foundations laid in the school-house!) must be the consequence of this sort of exposure. This is true in regard to *all* classes and conditions of pupils. But it should be distinctly kept in mind, although it is ordinarily overlooked and forgotten, that children accustomed to be comfortably protected against cold or vicissitudes of temperature, at home, will inevitably suffer the more when exposed to them in the school-house. And here is an additional reason why these structures should be improved, as our dwelling houses are generally becoming more comfortable.

But there is not room here for details—not even to exhibit *this* topic in all its important bearings. And it has been thus hinted at only to prove that the general charge of faulty construction is not wholly unfounded.

It was the purpose of the Superintendent to discuss at some length, the pernicious influence exerted, both upon the health of pupils, and their progress in learning, by the miserable structures in which the State abounds, but the extent of the remarks already made precludes it.

One cause of the prevailing fault in regard to the construction and internal arrangement of school-houses, doubtless, is the want of proper models. Districts, when about erecting a school-house, cannot well do more than follow the examples before them. To form the plan of a proper school-house—one well adapted to all the various ends which should be sought, such as the convenience, comfort, and health of pupils, convenience for supervision and conduct of the school, and facilities for the most successful prosecution of study—would require such an extent of observation and so full an acquaintance with the laws of health, of mind and morals—and then such a skill in designing a structure in which all the necessary conditions should be observed and secured. that it would be unreasonable to expect that a district could command them, without an opportunity to avail itself of the experience and observation of others. And districts have almost universally felt this lack of guidance. But it is believed that hereafter, information on the subject of school-house architecture, will be more accessible; and if, as a first step, some one district in every town in the State would avail itself of the necessary information, and make a vigorous effort to secure the erection of a well located, well planned, and well constructed school-house, they would perform an act of high public beneficence, as well as confer upon themselves an inestimable blessing. And shall not one or two years realize the accomplishment of this noble purpose? What district will lead the van?

NEW HAMPSHIRE.

EXTRACTS *from the* "*Report of the Commissioner,* (*Prof. Haddock, of Dartmouth College*) *of Common Schools, to the Legislature of New Hampshire, June Session,* 1847."

"The success of our whole system depends as much on a thorough reform in the construction and care of school-houses as upon any other single circumstance whatever.

It is wonderful, and when their attention is called to it, strikes the inhabitants of the Districts themselves as really unaccountable, that careful and anxious parents have been content to confine their children for so many hours a day through a large part of the severest and most trying seasons of the year, in houses so ill constructed, so badly ventilated, so imperfectly warmed, so dirty, so instinct with vulgar ideas, and so utterly repugnant to all habits of neatness, thought, taste, or purity. There are multitudes of houses in the State, not only inconveniently located, and awkwardly planned, but absolutely dangerous to health and morals.

And it has struck me with the greater surprise, that this is true not only of the thinly peopled parts of the State, but of flourishing villages. In one of the largest towns the principal District School was kept, the last winter, in a dilapidated, rickety, uncouth, slovenly edifice, hardly more comfortable than some barns within sight of it. In one enterprising village the school-house, as I looked at it from a little distance, appeared decidedly the shabbiest and most neglected building, not to say dwelling, within reach of my eye. I have been in houses, which no scrubbing could keep clean; they were never made to be clean: and this, in places, where private taste is adorning the town with the ornaments of architecture and enriching the country with the fruits of rural industry.

It is, however, encouraging to find, that a better feeling is coming to prevail on this subject. Many districts are rebuilding, and, in most instances, upon an improved plan. Some examples have been set of good judgment and liberal expenditure for this important object. And it is hoped, that other districts will be stimulated to imitate them.

Whenever a new house is to be erected, it should first be carefully located, so as best to accommodate the whole district, and by all means, on an open, healthy, agreeable site, with ample room about it on all sides and out of the way of floods of water or of dust.

MAINE.

EXTRACT *from a special "Report of the Secretary of the Board of Education, upon the subject of School-Houses."*

"It is worthy of note, and of most serious consideration, that a majority of the returns speak of ill-constructed school-houses as one of the most prominent 'defects in the practical operation of the law establishing common-schools.' The strength and uniformity of the language made use of, as well as the numerous applications to the members of the board, and their secretary, for information upon this subject, leave no room for doubt as to the existence of a wide-spread evil; an evil, the deleterious influence of which, unless it is reformed, and that speedily, is not to be confined to the present generation, but must be entailed upon posterity. In remarking upon this subject, as long ago as 1832, it was said by the board of censors of the American Institute of Instruction, that 'if we were called upon to name the most prominent defect in the schools of our country; that which contributes most, directly and indirectly, to retard the progress of public education, and which most loudly calls for a prompt and thorough reform, it would be the want of spacious and convenient school-houses.' From every indication, there is reason to believe that the remark is applicable to our school-houses, in their present condition, as it was when made. For the purpose of contributing, in some small degree, towards effecting a reform for which so urgent a necessity exists, and rendering some assistance, in the way of counsel, to those who are about erecting new school-houses, or remodelling old ones, this report is prepared, under the direction of the board. It makes no claim to originality of thought or language; it is, in fact, a mere compilation of the thoughts and language of others who have given the subject a careful investigation, whose opinions are the result of close observation and long experience, and are therefore entitled to our confidence and respect. To save the necessity of giving credit, upon almost every page of this report for borrowed language, as well as ideas, it may here be remarked, that the principal sources from which the information herewith communicated has been compiled, are, the reports upon the subject of school-houses, by Hon. Horace Mann und Henry Barnard, Esq., and 'The School-master,' by Mr. George B. Emerson; gentlemen to whom, for their efforts in the cause, a large debt of gratitude is due from the friends of education; a debt which can be discharged in no manner more acceptable to them, than by entering into their labors, and adopting and reducing to practice their very valuable suggestions."

RHODE ISLAND.

EXTRACTS *from "Report on the condition and improvement of the Public Schools of Rhode Island, submitted Nov.* 1, 1845, *by Henry Barnard, Commissioner of Public Schools."*

"The condition of the school-houses, was, in my circuit through the schools, brought early and constantly under my notice, and to effect an immediate and thorough reform, public attention was early and earnestly called to the subject. The many and great evils to the health, manners, morals, and intellectual habits of children, which grow out of their bad and defective construction and appurtenances, were discussed and exposed, and the advantages of more complete and convenient structures pointed out. In compliance with the request of the Committee on Education, a law authorizing school districts to lay and collect a tax to repair the old, and build new school-houses, was drafted and passed; and in pursuance of a resolution of the General Assembly, a document was prepared embodying the results of my observations and reflections on the general principles of school-architecture, and such plans and descriptions of various structures recently erected, for large and small, city and country districts, and for schools of different grades, as would enable any committee to act understandingly, in framing a plan suitable to the wants o. any particular district or school. The same document was afterwards abridged and distributed widely, as one of the '*Educational Tracts,*' over the state. I have secured the building of at least one school-house in each county, which can be pointed to as a model in all the essential features of location, construction, warming, ventilation, seats and desks, and other internal and external arrangements.

During the past two years, more than fifty school-houses have been erected, or so thoroughly repaired, as to be substantially new—and most of them after plans and directions given in the above document, or furnished directly by myself, on application from districts or committees."

"Of these, (three hundred and twelve school-houses visited,) twenty-nine were owned by towns in their corporate capacity; one hundred and forty-seven by proprietors; and one hundred and forty-five by school districts. Of two hundred and eighty school-houses from which full returns were received, including those in Providence, twenty-five were in very good repair; sixty-two were in ordinary repair; and eighty-six were pronounced totally unfit for school purposes; sixty-five were located in the public highway, and one hundred and eighty directly on the line of the road, without any yard, or out-buildings attached; and but twenty-one had a play-ground inclosed. In over two hundred school-rooms, the average height was less than eight feet, without any opening in the ceiling, or other effectual means for ventilation; the seats and desks were calculated for more than two pupils, arranged on two or three sides of the room, and in most instances, where the results of actual measurement was given, the highest seats were over eighteen inches from the floor, and the lowest, except in twenty-five schools, were over fourteen inches for the youngest pupils, and these seats were unprovided with backs. Two hundred and seventy schools were unfurnished with a clock, black-board, or thermometer, and only five were provided with a scraper and mat for the feet."

"Such was the condition of most of the places where the public schools were kept in the winter of 1843–44, in the counties of Kent, Washington and Newport, and in not a few districts in the counties of Providence and Bristol. In some districts, an apartment in an old shop or dwelling-house was fitted up as a school-room; and in eleven towns, the school-houses, such as they were, were owned by proprietors, to whom in many instances, the districts paid in rent a larger amount than would have been the interest on the cost of a new and commodious school house. Since the passage of the Act of January, 1844, empowering school districts to purchase, repair, build and furnish school-houses, and since public attention was called to the evils and inconvenience of the old structures, and to better plans of construction and internal arrangement, by public addresses, and the circulation of documents, the work of renovation in this department of school improvement has gone on rapidly. If the same progress can be made for three years more, Rhode Island can show, in proportion to the number of school districts; more specimens of good houses, and fewer dilapidated, inconvenient and unhealthy structures of this kind, than any other state. To bring about thus early this great and desirable result, I can suggest nothing beyond the vigorous prosecution of the same measures which have proved so successful during the past two years.

1. The public mind in the backward districts must be aroused to an active sense of the close connection of a good school-house with a good school, by addresses, discussions, conversation and printed documents on the subject, and by the actual results of such houses in neighboring districts and towns.

2. Men of wealth and intelligence in their several neighborhoods, and capitalists, in villages where they have a pecuniary interest, can continue tc exert their influence in this department of improvement.

3. School committees of every town can refuse to draw orders in favor of any district which will not provide a healthy and convenient school-room for the children of the district; and to approve plans for the repairs of an old, or the construction of a new house, which are to be paid for by a tax on the property of the district, unless such plans embrace the essential features of a good school-house.

4. The Commissioner of Public Schools must continue to furnish gratuitously, plans and directions for the construction and arrangement of school-houses, and to call the attention of builders and committees to such structures as can be safely designated as models.

Districts should make regulations to preserve the school-house and appendages from injury or defacement, and authorizing the trustees to make all necessary repairs, without the formality of a special vote on the subject."

MICHIGAN

EXTRACTS *from "Annual Report of the Superintendent (Hon. Ira Mayhew,) of Public Instruction of the State of Michigan, submitted December* 10, 1847."

"The *place* where our country's youth receive their first instruction, and where nineteen twentieths of them complete their scholastic training claims early attention. We may then profitably dwell upon the condition of our common school-houses.

In some instances school-houses are favorably located, being situated on dry, hard ground, in a retired though central part of the district, in the midst of a natural or artificial grove. But they are usually located without reference to taste, or the health and comfort of teacher or children. They are generally on one corner of public roads, and sometimes adjacent to a cooper's shop, or between a blacksmith's shop and a saw-mill. They are not unfrequently placed upon an acute angle, where a road forks, and sometimes in turning that angle the travel is chiefly behind the school-house, leaving it on a small triangle, bounded on all sides by public roads.

At other times the school-house is situated on a low and worthless piece of ground, with a sluggish stream of water in its vicinity, which sometimes even passes under the school-house. The comfort and health even of children are thus sacrificed to the parsimony of their parents.

Scholars very generally step from the school-house directly into the highway. Indeed, school-houses are frequently one half in the highway, and the other half in the adjacent field, as though they were unfit for either. This is the case even in some of our principal villages.

School-houses are sometimes situated in the middle of the highway, a portion of the travel being on each side of them. When scholars are engaged in their recreations, they are exposed to bleak winds and the inclemency of the weather one portion of the year, and the scorching rays of the meridian sun another portion. Moreover, their recreations must be conducted in the street, or they trespass upon their neighbors' premises. Such situations can hardly be expected to exert the most favorable influence upon the habits and character of the rising generation. * *

Although there is a great variety in the dimensions of school-houses, yet there are few less than sixteen by eighteen feet on the ground, and fewer still larger than twenty-four by thirty feet. Exclusive of entry and closets, when they are furnished with these appendages, school-houses are not usually larger than twenty by twenty-four feet on the ground, and seven feet in height. They are, indeed, more frequently smaller than larger. School-houses of these dimensions have a capacity of three thousand three hundred and sixty cubic feet, and are usually occupied by at least forty-five scholars in the winter season. Not unfrequently sixty or seventy, and occasionally more than a hundred scholars occupy a room of this size.

A simple arithmetical computation will abundantly satisfy any person who is acquainted with the composition of the atmosphere, the influence of respiration upon its fitness to sustain animal life, and the quantity of air that enters the lungs at each inspiration, that a school-room of the preceding dimensions does not contain a sufficient quantity of air to sustain the healthy respiration of even *forty-five* scholars, three hours, the usual length of each session; and frequently the school-house is imperfectly ventilated between the sessions at noon, or indeed, for several days in succession.

The ordinary facilities for ventilating school-rooms, are opening a door, or raising the lower sash of the windows. The prevailing practice with refrence to their ventilation, is opening and closing the door, as the scholars enter and pass out of the school-house, before school, during the recesses, and at noon. Ventilation, *as such*, I may safely say, has not hitherto been practiced in one school in fifty. It is true, the door has been occasionally set open a few minutes, and the windows have been raised, but the object has been, either to let the *smoke* pass out of the room, or to *cool* it when it has become *too warm*, not TO VENTILATE IT. Ventilation, by opening a door or raising the windows, is imperfect, and frequently injurious. A more effectual and safer method of ventilation, is to lower the upper sash of the windows, or, in very cold or stormy weather, to open a ventilator in the ceiling, and allow the vitiated air to escape into the attic. In this case, there should be a free communication between the attic and the outer air, by means of a lattice window, or otherwise. A ventilator may be constructed in connection with the chimney, by carrying up a partition in the middle. One half the chimney, in this case, may be used for a smoke flue, and the other half for a ventilator.

There are few school-houses the internal construction of which is in all respects alike; yet, by far the majority of them will rank in one of the three following classes:

1. The first class embraces those which are constructed with one or two tiers of desks along each side of the house, and across one end of it; the outer seat having the wall of the house for its back, and the front of each tier of desks constituting the back to the next inner seat. There is usually an alley on each side of the house and at the end of it, leaving the seats of sufficient length to accommodate from five to eight scholars. Those sitting next the alleys can pass to and from their seats without discommoding others. All the rest, (usually not less than three-fourths the entire number,) disturb from one to five or six scholars every time they pass to or from their seats; unless, (which is about as commonly practiced, especially with the scholars most distant from the alleys,) they *climb over the desks* in front of them.

Occasionally the desks are shorter, accommodating three or four scholars; and, sometimes, they are intended to accommodate two scholars only, so that each of them, (excepting the outer ones at the end desks,) sits adjacent to an alley, and can pass to and from his seat without disturbing others. There is usually a desk, or table, for the teacher's use, (or at least a *place* for one,) at the end of the house not occupied by the cross seats.

2. The second class embraces those in which the desks extend across the house, with an alley through the middle of it lengthwise, and occasionally one around the outside of the room. All the desks of the second class front the teacher's desk or table.

3. The third class embraces those which are constructed with a row of desks along each side of the house, and across one end of it, the desks fronting the walls of the house, so that the backs of the scholars, while sitting at them, are turned towards the teacher. In this class of houses there are usually three long seats without backs, just within the desks. Sometimes the seats are joined at the corners so as to continue unbroken, twice the length of the house and once its width, a distance of forty-five or fifty feet. There is usually a second tier of seats, and sometimes desks within them, fronting the central part of the room.

There is one impropriety in the construction of a majority of school houses. The desks are generally constructed with close fronts extending to the floor, whereby a free circulation of air, and consequent equilibrium of temperature, are interrupted, which would take place were the seats and desks so arranged as to allow suitable channels of communication. The scholars behind the desks are necessarily troubled with cold feet, unless the room is kept too warm. Were this evil removed, the first class, with short desks, would constitute a very comfortable and convenient arrangement, except from the circumstance that the children are placed opposite each other, which is a serious evil, especially where both sexes are in the same room, as is the case in nearly all of our common schools.

Another objection to long desks, is the inconvenience to which the scholars are subjected in passing to and from their seats. This objection exists to a considerable extent in the second class of houses, especially where there is not an alley around the outside of the room. Were it not for this inconvenience,—which might be obviated by introducing a greater number of alleys and shortening the desks, so as to accommodate but two scholars, each of whom would sit adjacent to an alley, and could pass to and from his seat without disturbing others—the *second* would, in my judgment, constitute the preferable plan. All the scholars should face the teacher, but none of them should face each other. This is particularly important where both sexes attend the same school.

And what shall I say of the third class?—I can readily enumerate some of its inconveniences, but its real advantages are, in my opinion, few. The following are some of the inconveniences: 1. There is little or no uniformity, usually, in the position of the scholars. Some of them face the walls, others the inner part of the room, and others still sit astride the seat. 2. When the teacher desires the attention of the school, a portion of the scholars must either turn about, or sit with their backs towards him, while he addresses them. 3. In changing their positions in foul weather, the scholars are apt to muddy the seats, and the clothes of those who sit adjacent to them. 4. The change of position is frequently embarrassing to the girls. 5. Front lights are less pleasant, and more injurious to the eyes, than side lights or back ones are. 6. Sitting on a plane seat, without a back, is uncomfortable, and often engenders disease of the spine, especially in childhood and youth.

The principal supposed advantage of this construction is, I believe, that it affords the teacher a better opportunity for detecting the scholars when engaged in mischief. I do not see how any material advantage of this kind can exist, till the bodies of children become transparent.

But were the *supposed* advantage real, it seems to me to be tempting children to do wrong, to give the teacher an opportunity of displaying his skill in detecting them. When children cannot see their teacher, they frequently think he cannot see them, and conduct accordingly.

There are several inconveniences not yet specified, existing to a less or greater extent, in each of the three classes of houses I have described.

1. The height of the seats, although sometimes adjusted with great care, is frequently determined without any apparent regard to the size and comfort of the scholars who are to occupy them. I have visited many schools in which the majority of the scholars reverse the ordinary practice of *standing up* and *sitting down*. They literally *sit up* and *stand down*, their heads being higher while *sitting* than when *standing*.

2. The desks, with their close fronts, are frequently several inches too high. I have visited many schools in which all that could be seen of a majority of the scholars occupying the back seats, was a *part of their heads*, and that, too, when they sat erect upon their seats. The desks, moreover, are frequently inclined twenty-five or thirty degrees, so that a book laid upon them immediately slides off. An inclination of one inch to the foot will be found more convenient than greater obliquity. A space of three inches on the most distant portion of the desk, should be left horizontal, for inkstands, pencils, pens, etc.

3. The floor is sometimes considerably inclined, for the purpose, I suppose, of giving the teacher a better opportunity of seeing the more distant scholars. The whole school is not only subjected to the inconvenience of walking up and down an inclined plane, but what is much worse, when scholars sit upon their seats, and rest their feet upon the floor, when within reach, they are constantly sliding from under them.

School-houses are not generally furnished with suitable conveniences for disposing of the loose wearing apparel of the scholars, their dinners, etc. There are sometimes a few nails or shelves, in a common entry, through which all the scholars pass, upon which a portion of their clothes may be hung or laid, and where dinners may be deposited. But in such cases, the outside door is usually left open, the rain and snow beat in, and the scholars, in haste to get their own clothes, frequently pull down as many more, which are trampled under foot. Moreover, the dinners are frozen, and not unfrequently they are devoured by dogs, and even by the hogs that run in the street. But the majority of school-houses are not furnished with an entry; and where there is one, frequently not even a nail can be found in it, upon which a single article of clothing may be hung. Neither are there nails or shelves for this purpose within the school-room. Scholars generally are obliged to throw their clothes across the desks, upon the seats, or into the windows.

School-houses are generally warmed by means of stoves, some of which are in a good condition, and supplied with dry wood from the wood-house. The instances, however, in which such facilities for warming exist, are comparatively few. It is much more common to see cracked and broken stoves, the doors without either hinges or latch, and rusty pipe of various sizes. Green wood, and that which is old and partly decayed, either drenched with rain or covered with snow, is much more frequently used for fuel, than sound, seasoned wood, protected from the weather by a suitable wood-house. With this state of things, it is difficult to kindle a fire, which burns poorly, at best, when kindled. The room is filled with smoke a considerable part of the time, especially in stormy weather. The school is frequently interrupted two or three times a day, to fasten together and tie up the stove pipe. This may seem a little like exaggeration. I know there are many exceptions. But in a majority of instances some of these inconveniences exist, and the most of them are united in more cases than people are aware of. I have heard trustees and patrons who have visited their school with me, for the first time in several years, say, "We ought to have some dry wood to kindle with;" "I did'nt know as it was so smoky;" "We must get some new pipe; really our stove is getting dangerous," etc. And some of the boys have relieved the embarrassment of their parents by saying, "It don't smoke near as bad to-day as it does sometimes."

The principal reason why the stoves in our school-houses are so cracked and broken, and why the pipes are so rusty and open, lies in the circumstance that *green wood from the snow bank*, is used for fuel, instead of *dry wood from the wood-house*. There are at least three reasons why this is poor policy.

1. It takes at least double the amount of wood. A considerable portion of the otherwise sensible heat becomes latent in the conversion of ice, snow and moisture into steam.

2. The steam thus generated cracks the stove and rusts the pipe, so that they will not last one half as long as though dry wood from the wood-house were used. And,

3. It is impossible to preserve an even temperature. Sometimes it is too cold, and at other times it is too warm. Several teachers have informed me that in order to keep their fires from going out, it was necessary to have their stoves constantly full of wood, that a portion of it might be seasoning while the rest was burning. Moreover, very offensive and injurious gases are generated in this manner.

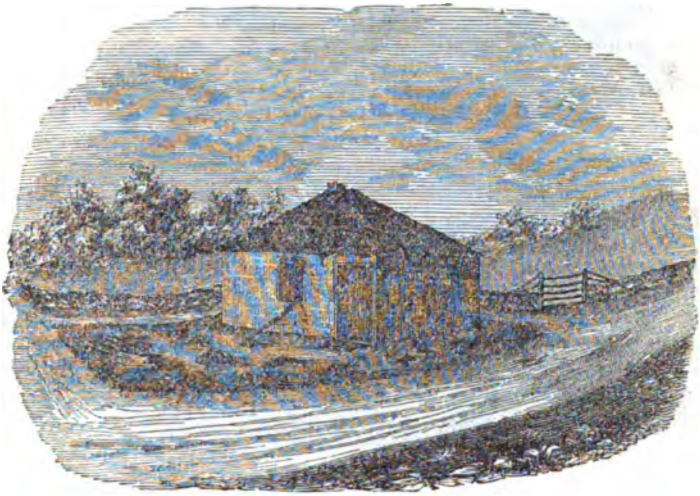
There are, perhaps, in the majority of school-houses, a pail for water, cup, and broom, and a chair for the teacher. Some one or more of these are frequently wanting. I need hardly say every school-house should be supplied with them all. In addition to these, every school-house should be furnished with the following articles:—1. An evaporating dish for the stove, which should be supplied with clean pure water. 2. A thermometer, by which the temperature of the room may be regulated. 3. A clock, by which the time of beginning and closing school, and conducting all its exercises, may be governed. 4. A shovel and tongs. 5. An ash-pail and ash-house. For want of these, much filth is frequently suffered to accumulate in and about the school-house, and not unfrequently the house itself takes fire and burns down. 6. A wood-house, well supplied with seasoned wood. 7. A well, with provisions not only for drinking, but for the cleanliness of pupils. 8. At last, though not least, in this connection, two privies, in the rear of the school-house, separated by a high close fence, one for the boys and the other for the girls. For want o. these indispensable appendages of civilization, the delicacy of children is frequently offended, and their morals corrupted. Nay, more, the un natural detention of the *fæces*, when nature calls for an evacuation, is frequently the foundation for chronic diseases, and the principal cause of permanent ill health, resulting not unfrequently in premature death.

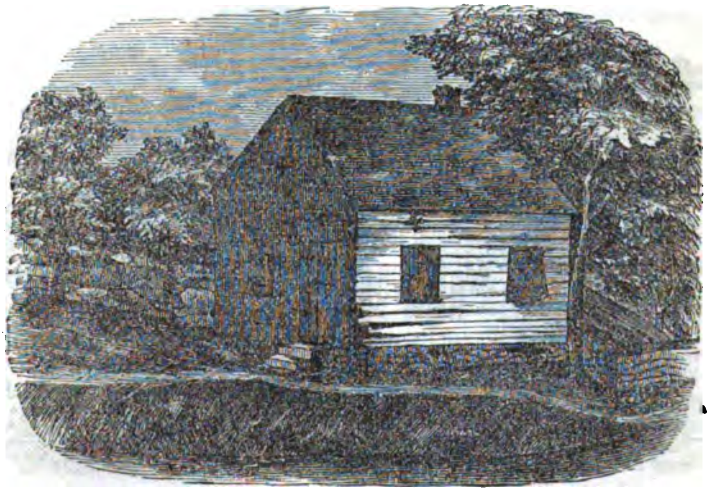
In architectural appearance, school-houses have more resembled barns, sheds for cattle, or mechanic shops, than Temples of Science,—windows are broken—benches are mutilated—desks are cut up—wood is unprovided—out buildings are neglected—obscene images and vulgar delineations meet the eye without and within—the plastering is smoked and patched—the roof is so open as to let in a flood of water in a storm, sufficient to drown out a school, were not the floor equally open."

We close this mass of testimony as to the deplorable condition of the common, or public school-houses in States where public instruction has received the most attention, with an extract from a "*Report on School-houses published by order of the Directors of the Essex County Teachers' Association* in 1833."

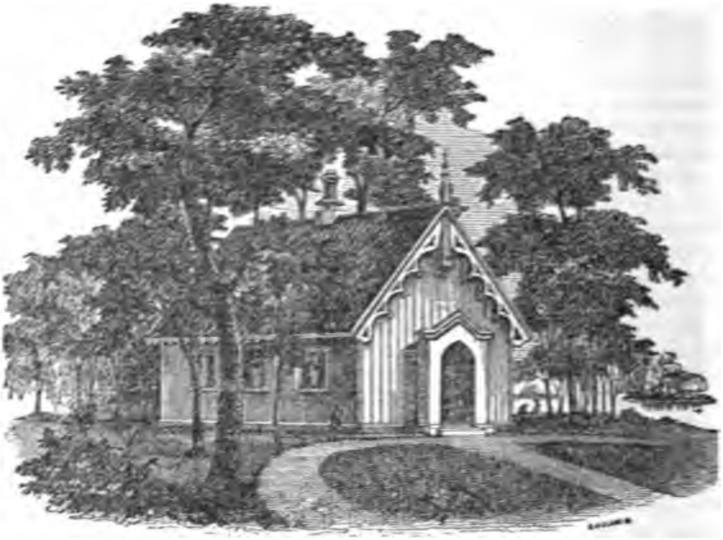
"There is one subject more to which we must be permitted to refer. One in which the morals of the young are intimately connected, one in which parents, instructors, and scholars, should unite their efforts to produce a reform; there should be nothing in or about school-houses, calculated to defile the mind, corrupt the heart, or excite unholy and forbidden appetites; yet considering the various character of those brought together in our public schools, and considering also how inventive are corrupt minds, in exhibiting openly the defilement which reigns within, we do not know but we must expect that school-houses, as well as other public buildings, and even fences, will continue to bear occasional marks both of lust and profaneness. But we must confess that the general apathy which apparently exists on this subject, does appear strange to us. It is a humbling fact, that in many of these houses, there are highly indecent, profane, and libidinous marks, images and expressions, some of which are spread out in broad characters on the walls, where they unavoidably meet the eyes of all who come into the house, or being on the outside, salute the traveler as he passes by, wounding the delicate, and annoying the moral sensibilities of the heart. While there is still a much greater number in smaller character, upon the tables and seats of the students, and even in some instances, of the instructors, constantly before the eyes of those who happen to occupy them. How contaminating these must be, no one can be entirely insensible. And yet how unalarmed, or if not entirely unalarmed, how little is the mind of community directed to the subject, and how little effort put forth to stay this fountain of corruption. We will mention as evidence of the public apathy, one house which we suppose is this day, it certainly was a few months since, defiled by images and expressions of the kind referred to, spread out in open observation upon its walls, which are known to have been there for eight or ten years. In this building during all this time, the summer and winter schools have been kept; here the district have held their business meetings; here frequently has been the singing-school; here, too, religious meetings have often been held; here, too, the school committee, the fathers, mothers, and friends of the children, have come to witness the progress of their children in knowledge and virtue; all of whom must have witnessed, and been ashamed of their defilement, and yet no effectual effort has been put forth to remove them.

The following views are engraved from "Daguerreotype Likenesses" of two district school-houses in Connecticut, *as they were in* 1852, and in which schools were not taught, but "*kept according to law.*" Although a good work has been accomplished within their walls, in years which go back beyond the memory of the oldest inhabitant, they are now neither attractive without, or convenient within.

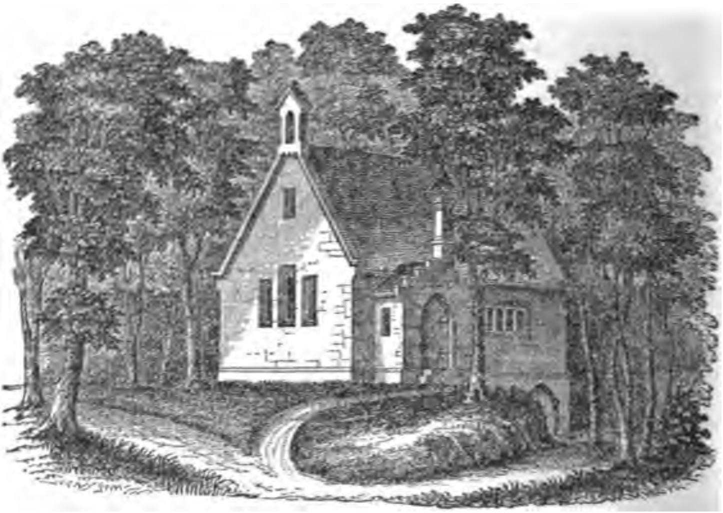




PRIMARY SCHOOL IN WESTERLY, R. I.



VILLAGE SCHOOL-HOUSE IN ALLENDALE, N. PROVIDENCE, R. I.



II. GENERAL PRINCIPLES OF SCHOOL ARCHITECTURE.

1. A location, healthy, accessible from all parts of the district; retired from the dust, noise, and danger of the highway; attractive, from its choice of sun and shade, and commanding, in one or more directions, the cheap, yet priceless educating influences of fine scenery.

2. A site large enough to admit of a yard in front of the building, either common to the whole school or appropriated to greensward, flowers and shrubbery, and two yards in the rear, one for each sex, properly inclosed, and fitted up with rotary swings, and other means of recreation and exercise, and with privies, which a civilized people never neglect.

3. Separate entrances to the school-room for each sex; each entrance distinct from the front door, and fitted up with scraper, mats, and old broom for the feet; with hooks, shelves, &c., for hats, overcoats, over-shoes, and umbrellas; with sink, pump, basin and towels, and with brooms and duster, and all the means and appliances necessary to secure habits of order, neatness and cleanliness.

4. School-room, in addition to the space required by aisles and the teacher's platform, sufficient to accommodate with a seat and desk, not only each scholar in the district who is in the habit of attending school, but all who may be entitled to attend; with verge enough to receive the children of industrious, thoughtful, and religious families, who are sure to be attracted to a district which is blessed with a good school-house and a good school.

5. At least one spare room for recitation, library, and other uses, to every school-room, no matter how small the school may be.

6. An arrangement of the windows, so as to secure one blank wall, and at the same time, the cheerfulness and warmth of the sunlight, at all times of the day, with arrangements to modify the same by blinds, shutters, or curtains.

7. Apparatus for warming, by which a large quantity of pure air from outside of the building can be moderately heated, and introduced into the room without passing over a red-hot iron surface, and distributed equally to different parts of the room.

8. A cheap, simple, and efficient mode of ventilation, by which the air in every part of a school-room, which is constantly becoming vitiated by respiration, combustion, or other causes, may be constantly flowing out of the room, and its place filled by an adequate supply of fresh air drawn from a pure source, and admitted into the room at the right temperature, of the requisite degree of moisture, and without any perceptible current.

9. A desk with at least two feet of top surface, and in no case for more than two pupils, inclined towards the front edge one inch in a foot, except two to three inches of the most distant portion, which should be level, and covered with cloth to prevent noise—fitted with an ink-pot (supplied with a lid and a pen-wiper,) and a slate, with a pencil-holder and a sponge attached, and supported by end-pieces or

stanchions, curved so as to be convenient for sweeping, and to admit of easy access to the seat—these of varying heights for small and large pupils, the front edge of each desk being from seven to nine inches (seven for the lowest and nine for the highest,) higher than the front edge of the seat or chair attached.

10. A chair or bench for each pupil, and in no case for more than two, unless separated by an aisle, with a seat hollowed like an ordinary chair, and varying in height from ten to seventeen inches from the outer edge to the floor, so that each pupil, when properly seated, can rest his feet on the floor without the muscles of the thigh pressing hard upon the front edge of the seat, and with a support for the muscles of the back, rising above the shoulder-blades.

11. An arrangement of the seats and desks, so as to allow of an aisle or free passage of at least two feet around the room, and between each range of seats for two scholars, and so as to bring each scholar under the supervision of the teacher.

12. Arrangements for the teacher, such as a separate closet for his overcoat, &c., a desk for his papers, a library of books of reference, maps, apparatus, and all such instrumentalities by which his capacities for instruction may be made in the highest degree useful.

13. Accommodations for a school library for consultation and circulation among the pupils, both at school and as a means of carrying on the work of self-education at their homes, in the field, or the workshop, after they have left school.

14. A design in good taste and fit proportion, in place of the wretched perversions of architecture, which almost universally characterize the district school-houses of New England.

15. While making suitable accommodation for the school, it will be a wise, and, all things considered, an economical investment, on the part of many districts, to provide apartments in the same building, or in its neighborhood, for the teacher and his family. This arrangement will give character and permanence to the office of teaching, and at the same time secure better supervision for the school-house and premises, and more attention to the manners of the pupils out of school. Provision for the residence of the teacher, and not unfrequently a garden for his cultivation, is made in connection with the parochial schools in Scotland, and with the first class of public schools in Germany.

16. Whenever practicable, the privies should be disconnected from the play-ground, and be approached from a covered walk. Perfect seclusion, neatness and propriety should be strictly observed in relation to them.

17. A shed, or covered walk, or the basement story paved under feet, and open for free circulation of air for the boys, and an upper room with the floor deafened and properly supported for calisthenic exercises for the girls, is a desirable appendage to every school.

III. PLANS OF SCHOOL-HOUSES.

In determining the details of construction and arrangement for a school-house, due regard must, of course, be had to the varying circumstances of country and city, of a large and a small number of scholars, of schools of different grades, and of different systems of instruction.

1. In by far the largest number of country districts as they are now situated, there will be but one school-room, with a smaller room for recitations and other purposes needed. This must be arranged and fitted up for scholars of all ages, for the varying circumstances of a summer and of a winter school, and for other purposes, religious and secular, than those of a school, and in every particular of construction and arrangement, the closest economy of material and labor must be studied. A union of two or more districts for the purpose of maintaining in each a school for the younger children, and in the center of the associated districts a school for the older children of all, or, what would be better, a consolidation of two or more districts into one, for these and all other school purposes, would do away with the almost insuperable difficulties which now exist in country districts, in the way of comfortable and attractive school-houses, as well as of thoroughly governed and instructed schools.

2. In small villages, or populous country districts, at least two school-rooms should be provided, and as there will be other places for public meetings of various kinds, each room should be appropriated and fitted up exclusively for the use of the younger or the older pupils. It is better, on many accounts, to have two schools on the same floor, than one above the other.

3. In large villages and cities, a better classification of the schools can be adopted, and, of course, more completeness can be given to the construction and arrangement of the buildings and rooms appropriated to each grade of schools. This classification should embrace at least three grades—viz. Primary, with an infant department; Secondary, or Grammar; Superior, or High Schools. In manufacturing villages, and in certain sections of large cities, regularly organized Infant Schools should be established and devoted mainly to the culture of the morals, manners, language and health of very young children.

4. The arrangement as to supervision, instruction and recitations, must have reference to the size of the school; the number of teachers and assistants; the general organization of the school, whether in one room for study, and separate class rooms for recitation, or the several classes in distinct rooms under appropriate teachers, each teacher having specified studies; and the method of instruction pursued, whether the mutual, simultaneous, or mixed.

Since the year 1830, and especially since 1838, much ingenuity has been expended by practical teachers and architects, in devising and perfecting plans of school-houses, with all the details of construction and fixtures, modified to suit the varied circumstances enumerated above, specimens of which, with explanations and descriptions, will be here given.

PLANS OF SCHOOL-HOUSES WITH ONE SCHOOL-ROOM.

THE largest number of school-houses which are erected with but one school-room, are intended for District, or for Primary Schools.

DISTRICT SCHOOL.

By a District School, in this connection, is understood a public school open to all the children of the district, of both sexes, and of the school age recognized by the practice of the district, or the regulations of the school committee of the town to which such district belongs. It is an unclassified school, and is taught in one apartment, by one teacher, usually without any assistance even from older pupils of the school. It varies in the character of its scholars, and its methods of instruction, from summer to winter, and from winter to summer. In summer, the younger children and classes in the elementary studies predominate, and in the winter the older pupils, and classes in the more advanced studies, whilst some of both extremes, as to age and studies, are to be found in both the winter and summer session of the district school. This variety of ages and studies, and consequent variety of classes, increased by the irregularity of attendance, is not only a serious hinderance to the proper arrangement, instruction and government of the school, but presents almost insuperable obstacles to the appropriate construction and furniture of the school-house, which is too often erected on the smallest possible scale of size and expense. A vast amount of physical suffering and discomfort to the pupils is the necessary result of crowding the older and younger pupils into a small apartment, without seats and furniture appropriate to either, and especially when no precaution has been taken to adapt the supply and arrangements of seats and desks according to the varying circumstances of the same school in winter and summer. In every district, or unclassified school, the school-room should be fitted up with seats and desks for the older and younger pupils, sufficient to accommodate the maximum attendance of each class of scholars at any season of the year. And if this cannot be effected, and only a sufficient number of seats can be secured to accommodate the highest number of both sexes in attendance at any one time, then in winter the seats and desks for the smaller children should be removed to the attic, and their place supplied by additional seats and desks for the older pupils; and in summer this arrangement should be reversed

PRIMARY SCHOOLS.

By a Primary School, in our American School Systems, is understood, not generally an Elementary School, embracing a course of instruction for the great mass of the children of the community under fourteen years of age—but specifically, that class or grade of schools which receive only the youngest pupils, and those least advanced in their studies.

Any scheme of school organization will be imperfect which does not include special arrangements for the systematic training and instruction of very young children, especially in all cities, manufacturing villages, and large neighborhoods. Among the population of such places, many parents are sure to be found, who, for want of intelligence or leisure, of constancy and patience, are unfitted to watch the first blossoming of the souls of their children, and to train them to good physical habits, virtuous impulses, and quick and accurate observations; to cleanliness, obedience, openness, mutual kindliness, piety, and all the virtues which wise and far-seeing parents desire for their offspring. The general result of the home training of the children of such parents, is the neglect of all moral culture when such culture is most valuable; and the acquisition of manners, personal habits, and language, which the best school training at a later period of life can with difficulty correct or eradicate. To meet the wants of this class of children, Halls of Refuge and Infant Schools were originally instituted by Oberlin, Owen, and Wilderspin, and now constitute under these names, or the names of Primary Schools, or Primary Departments, a most important branch of elementary education, whether sustained by individual charity, or as part of the organization of public instruction.

No one at all acquainted with the history of education in this country, can doubt that the establishment of the Primary School for children under six years of age, in Boston, in 1818, as a distinct grade of schools, with the modifications which it has since received there, and elsewhere, from the principles and methods of the Infant School system, has led to most important improvements in the quality and quantity of instruction in our public schools, and the sooner a Primary School properly organized, furnished and managed, can be established in every large neighborhood, and especially in the "infected districts" of cities and manufacturing villages, the more rapid and more thorough will be the progress of education.

Location, Yard, and Play Ground.

The site or location of a school-house should be quiet, retired, accessible, attractive, and in all respects healthy. To secure these conditions, no reasonable expense should be spared—for a house thus situated promotes in many ways the highest objects for which a school is instituted.

Noisy and dusty thoroughfares, and the vicinity of places of idle and vicious resort, as well as bleak plains, unsheltered hill tops, and stagnant marshes, should all be avoided, no matter how central, accessible, or cheap the land may be.

In a city or village, a rear lot, with access from two or more streets, will not only be more economical, quiet and safe, but will secure, at the same cost as a narrow front lot, the advantages of a spacious play ground, and admit of the adornments of flower plats, shrubbery, and trees.

In the country, and in small villages, there will be no difficulty, to a liberal and enlightened community or committee, in procuring a spacious lot, attractive from its choice of sun and shade, of trees and flowers, and commanding, in one or more directions, the cheap yet priceless educating influences of fine scenery.

In city or country, a site should be provided, large enough to admit of a yard in front of the building, either common to the whole school, or appropriated to greensward, flowers, and shrubbery, and two yards in the rear, one for each sex. properly graded, inclosed, and fitted up with apparatus for recreation and exercise in all states of the weather, and with privies, which a civilized people never forgets, and in respect to which the most perfect seclusion, neatness, and propriety should be enforced.

The extent to which facilities for gymnastic and calisthenic exercises shall be introduced into the play-ground, must be determined by the circumstances of the school, and mainly by the place which they are to occupy as part of the physical education of the pupils. For purposes of recreation, except in the simplest and cheapest form, and for very young children, and at all times under the direction and supervision of the teacher, who should be specially trained to superintend the exercises and amusements of the play ground, this apparatus has not much value. When pursued at all times, without system, without reference to age, or strength, or the purposes intended, without direction, from day to day for a whole term, the exercises become wearisome, the apparatus is abused, and serious accidents not unfrequently occur. But when gymnastics can be taught and practiced as a regular branch of education—when the more difficult fetes of activity, strength, and endurance, are attained by elementary trials of various sorts, graduated to the age and constitution of each pupil, and so alternated as to keep the interest constantly alive—when walking exercises in the field, or to remarkable places, and even ordinary spots, are occasionally substituted for the military drill, and running, leaping, vaulting, balancing, climbing, and lifting, in the gymnasium—when the incidental acquisition of the moral habits of cleanliness in person, neatness in dress, punctuality, promptitude, and obedience, is made a matter of even greater importance than the direct result of muscular development, an erect and graceful carriage, a firm and regular step, which are the direct objects of these exercises—then, they are truly valuable, and every facility for their introduction should be provided in the play ground. Whenever introduced, the machines and instruments should be constructed of the best material and by the best workmen, for life and limb must not be endangered to save expense in these respects.

The following cuts and description may be useful to an ingenious carpenter, who can not consult a systematic treatise on gymnastics.[*] The cut which follows, of a play-ground for an infant, or primary school, is copied from Wilderspin's Early Education. We should prefer to see a female teacher presiding over the scene.

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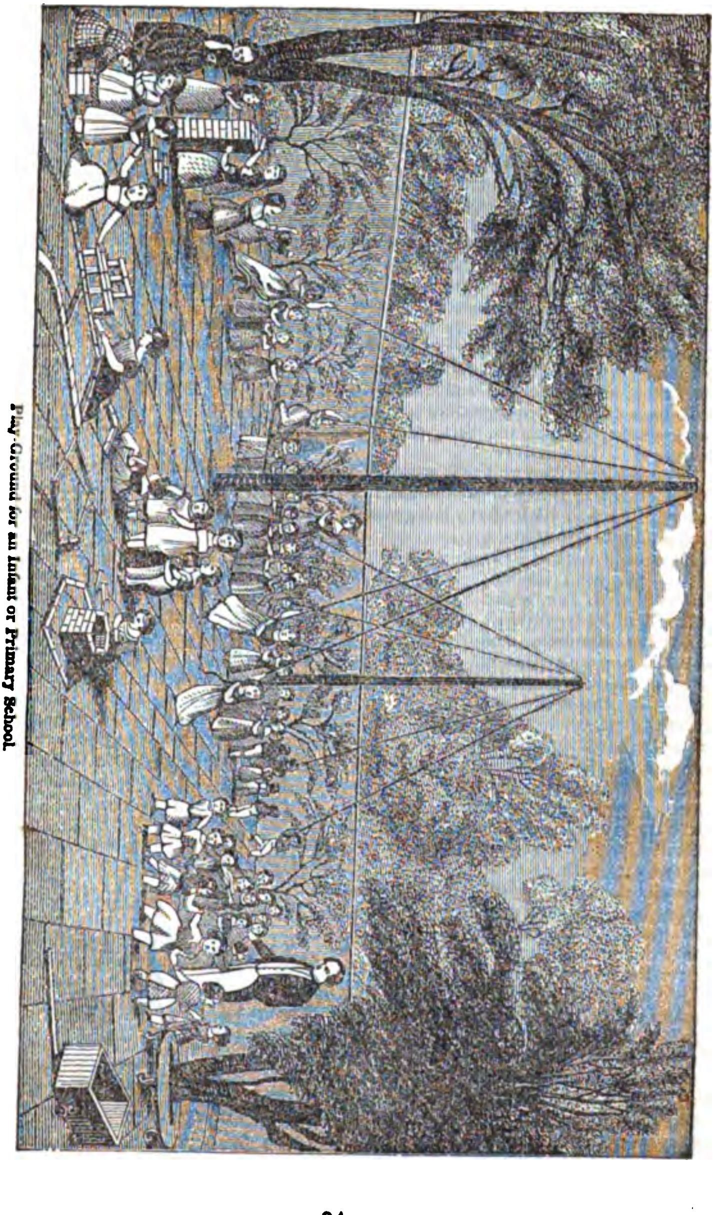
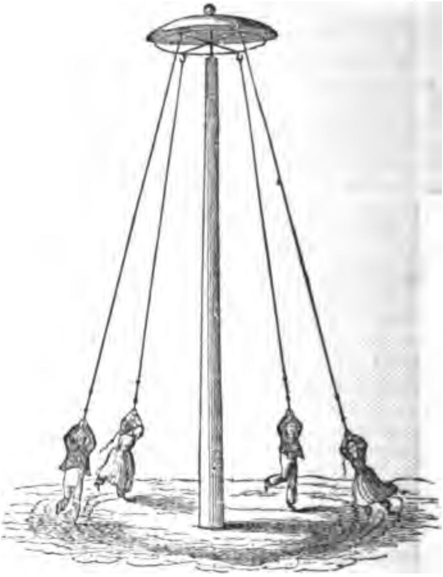
[*] *See* INSTRUCTIONS IN GYMNASTICS, containing a full description of more than eight hundred exercises, and illustrated by five hundred engravings, By J. E. D'Alfonce, late professor of Gymnastics in the Military School in St. Petersburgh, and in Paris. New York: George F. Nesbit & Co., Wall street. 1851.



Play-Ground for an Infant or Primary School.

The house should stand in a dry and airy situation, large enough to allow a spacious play ground. No pains should be spared on this principal and paramount department of a proper infant school. The more extensive the ground may be, the better; but the smallest size for 200 children ought to be 100 feet in length, by at least 60 in breadth. It should be walled round, not so much to prevent the children from straying, as to exclude intruders upon them, while at play: for this purpose, a wall or close paling, not lower than six feet high, will be found sufficient. With the exception of a flower border, from four to six feet broad all round, lay the whole ground, after leveling and draining it thoroughly, with small *binding* gravel, which must be always kept in repair, and well swept of loose stones. Watch the gravel, and prevent the children making holes in it to form pools in wet weather; dress the flower border, and keep it always neat; stock it well with flowers and shrubs, and make it as gay and beautiful as possible. Train on the walls cherry and other fruit trees and currant bushes; place some ornaments and tasteful decorations in different parts of the border—as a honeysuckle bower, &c., and separate the dressed ground from the graveled area by a border of strawberry plants, which may be protected from the feet of the children by a skirting of wood on the outside, three inches high, and painted green, all round the ground. Something even approaching to elegance in the dressing and decking of the playground, will afford a lesson which may contribute to refinement and comfort for life. It will lead not only to clean and comfortable dwellings, but to a taste for decoration and beauty, which will tend mainly to expel coarseness, discomfort, dirt, and vice, from the economy of the humbler classes.

For the excellent and safe exercise afforded by the *Rotary Swing*, erect, at the distance of thirty feet from each other, two posts or masts, from sixteen to eighteen feet high above the ground; nine inches diameter at the foot, diminishing to seven and a half at top; of good well-seasoned, hard timber; charred with fire, about three feet under ground, fixed in sleepers, and bound at top with a strong iron hoop. In the middle of the top of the post is sunk perpendicularly a cylindrical hole, ten inches deep, and two inches in diameter, made strong by an iron ring two inches broad within the top, and by a piece of iron an inch thick to fill up the bottom, tightly fixed in. A strong pivot of iron, of diameter to turn easily in the socket described, but with as little lateral play as possible, is placed vertically in the hole, its upper end standing 4 inches above it. On this pivot, as an axle, and close to the top of the post, but so as to turn easily, is fixed a wheel of iron, twenty-four inches diameter, strengthened by four

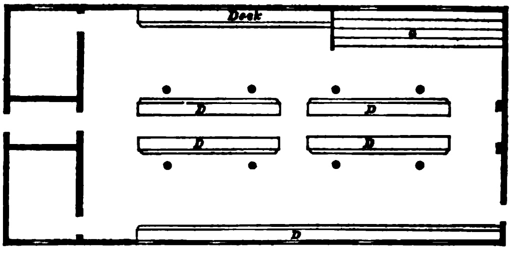


Rotary Swing.

spokes, something like a common roasting-jack wheel, but a little larger. The rim should be flat, two inches broad, and half an inch thick. In this rim are six holes or eyes, in which rivet six strong iron hooks, made *to turn in the holes*, to prevent the rope from twisting. To these hooks are fixed six well-chosen ropes, an inch diameter, and each reaching down to within two feet of the ground, having half-a-dozen knots, or small wooden balls, fixed with nails, a foot from each other, beginning at the lower extremity, and ascending to six feet from the ground. A tin cap, like a lamp cover, is placed on the top of the whole machine, fixed to the prolongation of the pivot, and a little larger than the wheel, to protect it from wet. To this, or to the wheel itself, a few waggoners' bells appended, would have a cheerful effect on the children. The operation of this swing must, from the annexed cut, be obvious. Four, or even six children, lay hold of a rope each; as high as they can reach, and, starting at the same instant, run a few steps in the circle, then suspend themselves by their hands, drop their feet and run again when fresh impulse is wanted; again swing round, and so on. A child of three or four years old, will often fly several times round the circle without touching the ground. There is not a muscle in the body which is not thus exercised; and to render the exercise equal to both halves of the body, it is important that, after several rounds in one direction, the party should stop, change the hands, and go round in the opposite direction. To prevent fatigue, and to equalize the exercise among the pupils, the rule should be, that each six pupils should have thirty or forty rounds, and resign the ropes to six more, who have counted the rotations.

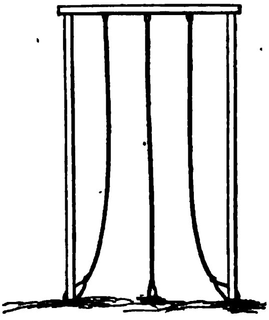
Toys being discarded as of no use, or real pleasure, the only *plaything* of the playground consists of bricks for building, made of wood, four inches by two and one and a-half. Some hundreds of these, very equally made, should be kept in a large box in a corner of the ground, as the quieter children delight to build houses and castles with them; the condition, however, always to be, that they shall correctly and conscientiously replace in the box the full complement or *tale* of bricks they take out; in which rule, too, there is more than one lesson.

In a corner of the playground, concealed by shrubbery, are two water closets for the children, with six or eight seats in each; that for the boys is separate from, and entered by, a different passage from that for the girls. Supply the closets well with water, which, from a cistern at the upper end, shall run along with a slope under all the seats, into a sewer, or a pit in the ground. See that the closets are in no way misused, or abused. The eye of the teacher and mistress should often be here, for the sake both of cleanliness and delicacy. Mr. Wilderspin recommends the closets being built adjoining the small class-room, with small apertures for the teacher's eye in the class-room wall, covered with a spring lid, and commanding the range of the place. There is nothing in which children, especially in the humbler ranks, require more training.



The annexed cut represents an infant school-room, modified in a few unimportant particulars, from the ground plan recommended by Mr. Wilderspin in his "*Early Education*," published in 1840. The original plan embraces a dwelling for the teacher's family, and two school-rooms, one for the boys and the other for the girls, each school having a gallery, class-room, and playground. The school-room is about 60 feet long by 38 wide, and the class-rooms each 13 ft. by 10. D. Desks and Seats. G. Gallery, capable of accommodating 100 children.

The chief requisites in an infant-school play-ground are the following: A Climbing Stand; a Horizontal Bar; Parallel Bars; Wooden Swings; a Double Inclined Plane.



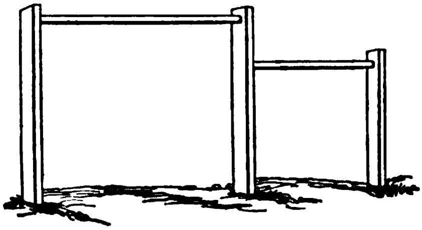
The Climbing Stand consists essentially of a frame-work of poles, which support ropes for climbing. One of the most simple and economical is made of two ordinary scaffold poles, planed smooth and painted, which support a transverse beam having hooks, to which the ropes are attached.

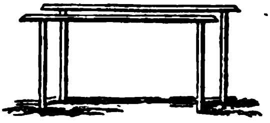
The dimensions may be as follows: Length of perpendicular poles, 15 feet, of which 4 feet are sunk in the ground; circumference of poles at the surface of the ground, 14 inches; length of transverse beam at top, 9 feet. To this beam are attached, by screwing in, two iron hooks, which support the ropes; these are 1½ inches in diameter, to afford a firm grasp to the hand. In order that the ropes may not wear through where attached to the hooks, they are spliced round an iron ring, which is grooved on the outer surface to give a firmer hold to the rope. Both the ropes should be attached to the bottom of the poles so as to hang loosely: if not fastened at the bottom, the children use them as swings while clinging to them, and are apt to injure themselves by falling, or others by coming violently in contact with them.

No apparatus is more advantageous: it is economical in its erection, and not liable to get out of order; it affords exercise to a number of children at the same time, a succession being constantly engaged in climbing and descending the ropes and poles; the muscular exertion is not violent, but decidedly beneficial, expanding the chest, and giving power and freedom of motion to the arms. This exercise is also quite free from danger, the children never advancing higher up the ropes than they feel themselves secure. During the seven years the Home and Colonial Infant-school has been established, 200 children have been the average attendance, but no accidents have occurred from the use of the climbing-stand.

The Horizontal Bar consists of a wooden bar formed of beech, red deal, or some other tough wood not apt to splinter or warp, about three inches in diameter, and usually six feet long, turned or planed round and smooth, in order that the hands may not be blistered by the friction.

Every play-ground should possess two or three of these useful additions; one 6 feet from the ground, another 5 feet, and a third 4 feet high,—each one being supported and fixed firmly by a post at both ends. Or they may be arranged so that four posts will support the three bars. The exercises performed on the horizontal bars consist in the child remaining suspended by the arms and hands; in drawing the body up so as to look over the bar several times in succession; in traversing from one end of the bar to the other (suspended by the hands,) both backwards and forwards; in swinging the body whilst suspended from the bar.



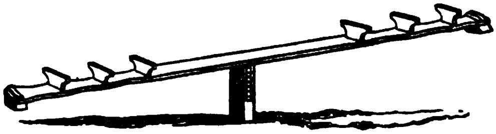


The Parallel Bar consists of two bars placed parallel with one another, each being from 6 to 8 feet long, 4 inches deep by 2 inches wide, with the corners rounded off. The posts that support these bars in their position should be 18 inches apart. The bars should project four inches beyond the post. Two sets of parallel bars are advantageous, one being 2 feet 9 inches high for the younger children, the other 4 feet high for the elder.

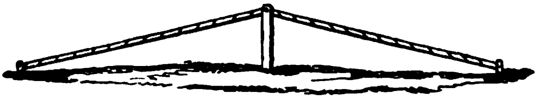
The exercises on these bars consist in supporting the body on the arms, one hand resting on each bar, and by moving each hand alternately, proceeding forwards and backwards along the bars; in swinging the body between the arms; and in springing over the bar on each side, both backwards and forwards.

The Wooden Springs afford a kind of exercise extremely popular with the younger children, who are not sufficiently active to take part in the other exercises. Each swing consists of two distinct parts: 1. A piece of 2-inch deal, 1 foot wide and 3 feet long, one end of which is sunk firmly in the ground, the other projecting 18 inches above the surface. At each edge of this piece is screwed on an iron plate, with an eye to receive the iron pivot on which the upper piece works. The upper, or horizontal piece, is made of 2-inch plank, 1 foot wide and 12 feet long. At each end of this piece three handles, formed of 1¼-inch deal, are strongly mortised in, 1 foot apart, thus forming seats for three children at each end. Between the handles the plank should be rounded at the edges, so as to form an easy seat. At the under surface of each end a small block of wood is fixed, to prevent the plank wearing by striking the ground.

The above directions should be adhered to. If the support be made lower, the motion of the swing is much lessened; if the plank be made shorter, or the support higher, the swing approaches too nearly to the perpendicular, and serious accidents may ensue from the children being thrown violently from the seats. The whole should be made as stout as recommended, otherwise it is apt to break from the violent action.



The Double Inclined Plane is adapted more especially for the younger children. It consists merely of a support of two-inch deal, 1 foot wide, and projecting 3 feet from the ground. On this is laid the ends of two planks, each 12 feet long, 1 foot wide, and 1¼ inch in thickness. On the upper surface of each plank may be nailed, at intervals of eight or ten inches, small cross-pieces, to prevent the feet slipping.



The use of the inclined plane is, that by ascending and descending it, children acquire a facility in balancing themselves. The exercise is beneficial, as it calls into action the muscles of the legs and even of the body. It also furnishes an excellent situation to jump from, as the children can themselves vary the height of the leap at pleasure.

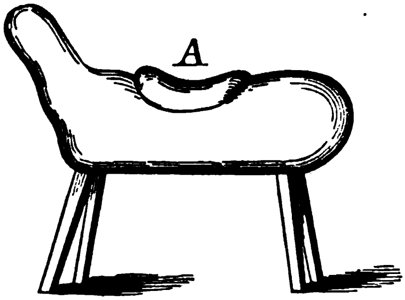
The general use of all these various exercises is, that the different muscles of the body may be strengthened, and the children thus fitted for a future life of labor, and better prepared to escape in case of accidents

In addition to these simple appliances of the playground, and which are particularly adapted to young children, there are a variety of gymnastic machines or apparatus, designed for the systematic exercise of the entire physical organization of scholars, some of which it would be desirable to provide in some sheltered position of the yard, in all city schools, but which should be accessible only under strict regulations, and the instructions of a well-trained master. As an illustration both of the machines and their arrangement, we give below engravings of the ground plan and principal machines of the gymnasium attached to the Collegiate and Commercial Institute—a private school of the highest grade of William H. Russell, of New Haven—which has the best apparatus which has fallen under our observation in this country.

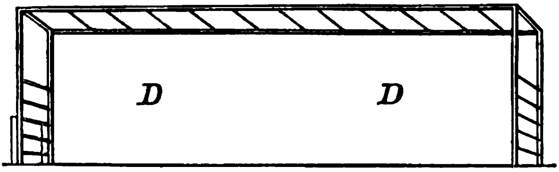
In the large cut, there will be observed a partition running across the building near the stove and staircase *W*. This marks the limit of a boarded platform at this end, upon which arrangements may be made for a dressing-room, or at least for clothes pegs.

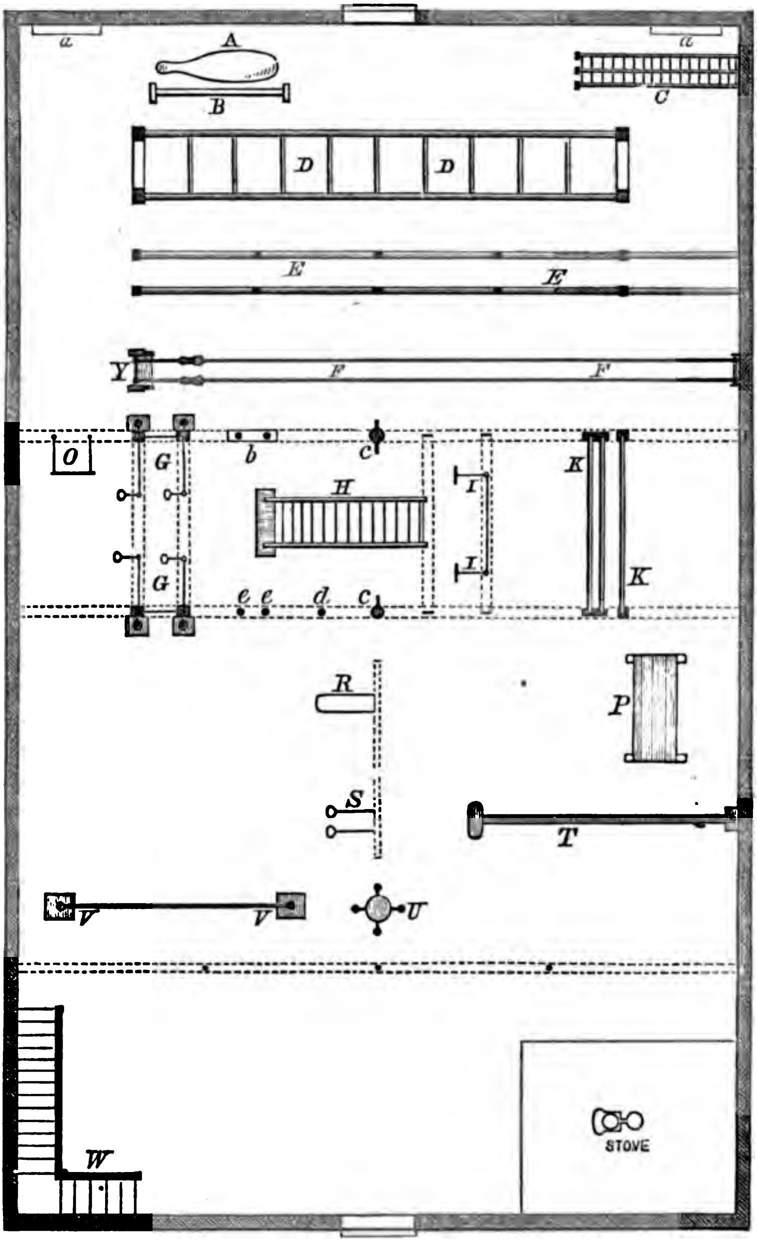
As the letters upon the cuts of single machines designate the same machines in the larger engraving, the descriptions which we will give of them will apply to both.

The *wooden horse*, *A*, is a log, which may be, if preferred, rudely fashioned like a horse's body, and is set upon four legs, about breast high. Two cross-pieces, which do not appear in the cut, should be set transversely in the places of the pommel and cantle of the saddle, raised high enough to allow of being well grasped by the hand, and rounded over the top. The exercises upon this machine are leaps and vaulting with the help of the hands, which are set upon the above cross-pieces, or on various parts of the machine. *B*, is a *spring-board;* an elastic plank raised upon blocks at the ends, to assist the spring. It is, however, doubtful whether such aids are desirable, for they do not habituate the pupil to the unyielding surface from which leaps must generally be taken. The wooden horse exercises give elasticity and spring to the frames and are useful to riders.



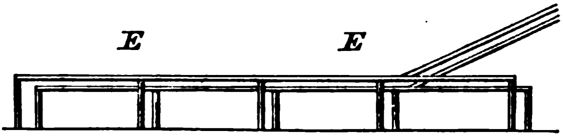
C, is a *slanting ladder*, and *D*, a *horizontal* one. The exercises upon these consist in hanging upon or under them, and passing from one end to the other, by means of the hands alone, in various ways, and are intended to strengthen the gripe, the arms, and the shoulders. The slanting ladder may run at an angle of about forty-five degrees, from a base about four feet high, to an altitude as great as is convenient.



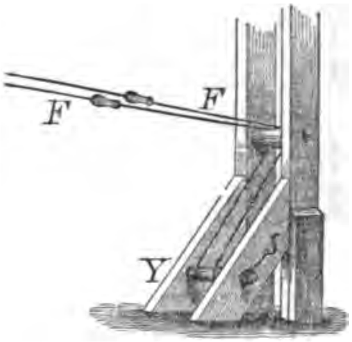


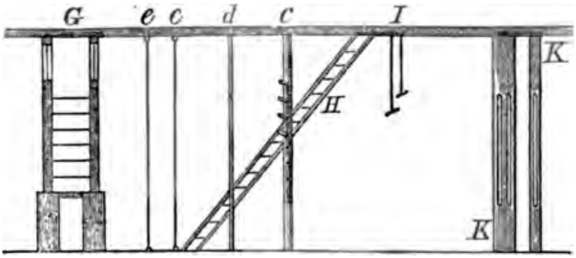
Ground Plan of Gymnasium attached to Russell's Collegiate and Commercial Institute, New Haven.

E, is a pair of *parallel bars*, both horizontal and slanting. The exercises upon this machine widen the shoulders, open the chest, and strengthen that and the shoulders. They are somewhat difficult, but exceedingly strengthening. The bars are large enough to grasp, say two and a half inches in thickness by three and a half deep, set upon strong uprights, so framed that the uprights at their insertion do not extend beyond the bars. About five feet is a proper height for the upper side of the bars.

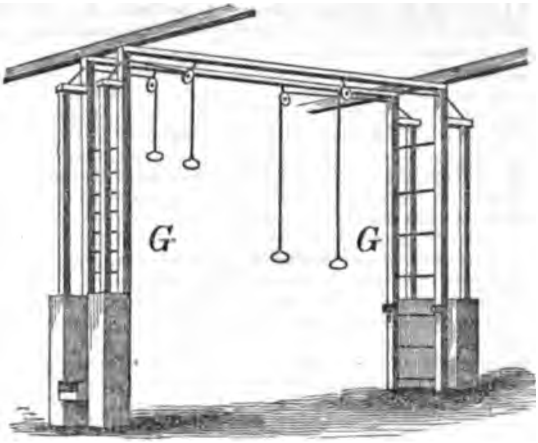


F, is a *pair of inclined ropes*, with their sliding-boxes. The windlass at *Y*, with a stout ratchet, is used to keep the ropes strained tight. This machine is not very useful; the principal operation to be performed upon it being to put the sliding-boxes under the arms, and progress up the ropes by swinging the body.

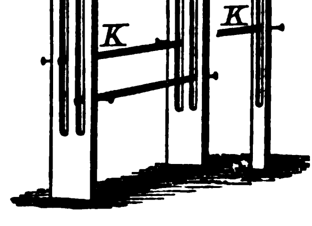




The machines marked *G*, *H*, *I*, *K*, *O*, *c*, *d*, and *e*, are fixed between timbers and cross-pieces, whose places are shown by dotted lines, and the ground. *G*, *G*, are the *weights*. They run in wooden tubes, and are suspended upon ropes, at the other end of which are rings for handles, seen hanging down in the cut. These are used to exercise the arms; and the exercisers upon them are capable of rapidly developing the muscles of the fore arm, upper arm, shoulder and chest. They are performed by drawing or pushing out the weights with the fingers, hands, or feet, in various positions. *H*, is a *slanting ladder*, such as was above described. *I*, is a double running rope, running over two sheaves set in a cross-piece upon



the timbers overhead, and with a stout wooden handle, hung by the middle, at each end; so that these handles hang loose, perhaps six feet apart, and five or six feet from the ground. Two persons, of nearly equal weight, are best fitted to use this machine. One jumps up a few inches, while the other weighs down upon his end of the rope so as to keep it strained tight; and as the first comes down again, the second jumps in his turn; the motion being increased, if desired, until the jumps carry the hands up to the timber overhead, and the lower of the two pupils crouches down to the ground. *K*, is a single and double *vaulting bar*. The bars are movable in slips in the uprights, and are set at any desired height by iron pegs running in holes in the uprights and through the bars. The bars, either alone or together, are used for performing jumps from the ground, with the hands on the bar, and for various other exercises with the feet off the ground. The vaulting exercises strengthen the lower limbs and give elasticity; the remaining ones are chiefly calculated, as indeed are the majority of the apparatus exercises, to strengthen the body above the waist, and the arms. *O*, is a *trapezium* or bar-swing; a hard-wood cross-bar, hung by two ropes, and which should be about five and a half or six feet from the ground. The trapezium exercises are numerous, and consist of jumping, swinging, and turning, in many ways.

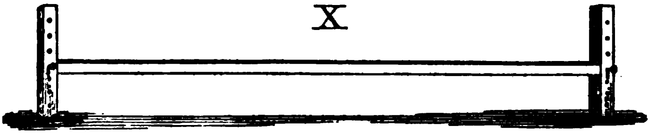


They are not very difficult, and quite pleasant to perform. *e*, *e*, are two upright ropes for climbing, and *d* is a perpendicular pole for the same purpose. These should be as high as the building arrangements will allow. *c*, *c*, are upright poles, with pegs in them fitting loosely into holes. These poles are to be climbed by taking a peg in each hand and setting them one after another into the holes. At *b*, in the large cut, are two upright poles at about the width of the shoulders apart. These may be used for climbing, and for exercising the chest, by holding the poles, one in each hand, nearly shoulder high, and pushing the head and shoulders through between them. *P*, is a wide spring-board for jumping forward. *R*, is a *rope swing*. *S*, is a pair of *iron rings*, hung upon single ropes from a bar overhead, about as high as the trapezium; and the exercises upon them are of the same character, though more varied, difficult, and pleasant. They demand and develope great quickness, and strength of arm and chest, and, if practiced with care, are among the most useful of the gymnastic exercises.

T, is a *spring-beam* set firmly into the wall, and resting upon a fulcrum a short distance from it, so as to furnish considerable elastic force. It is used for perpendicular jumping.

U, is a *flying-machine or rotary-swing*, which is described on page 86.

V, is a *movable leaping-stand*, for standing or running jumps. It consists of two light uprights, set in heavy bases, so as to stand firmly, and with a row of holes, an inch or two apart, at corresponding heights in each. Pegs fit into these, over which, at any desired height, may be hung a string with a weight of about five pounds at each end. By this means all danger of catching the feet in jumping is avoided, as a light touch throws the string off the pegs.



X

X, (which does not appear on the large cut) is a *horizontal beam;* a stout square stick of hard wood about twenty feet long, with tenons at each end, running in slits in the uprights. Iron pins pass through the uprights, and through holes in the tenons, and hold the beam at any height desired. The uprights may stand about four feet above the surface of the ground, and the holes in them may be three inches apart. The beam should be not less than four inches square. This machine is used for various leg exercises, which are of considerable value.

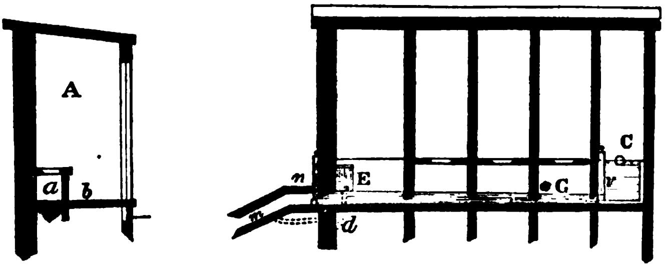
Exercises in marching, military drill, walking, and running, should be combined with the apparatus exercises, as these latter generally serve as to strengthen and develope the body and arms more than the legs. Mr. Russell has found a most healthy and valuable disciplinary influence in the military drill constantly practiced by his pupils. It gives them promptness, an upright and graceful carriage, and habits of regularity and quick obedience. They exercise with cadet muskets, which are stored in a small loft in one end of the gymnasium, and are organized into a very neat uniform company.

All gymnastic apparatus should be made of the best materials and put together in the best manner, in order to withstand the great strain to which it is subject, and to prevent accidents from breaking. Most or all of the uprights should be strongly framed, and braced into mud-sills at least two feet under ground. No exercises should be ordinarily allowed in the gymnasium, except in the presence and under the directions of a competent and reliable teacher. The exercises should be reduced to a regular and progressive system, and should be performed with as much regularity and care as those of the school recitations; according to the instructor's directions, and by no means according to the caprice of the pupils. This precaution will almost certainly prevent the accidents whose occurrence is so often used as an argument against gymnastics, and ill-directed efforts to perform the harder exercises before the easier are mastered; it will likewise insure a proper amount of drilling thorough acquisition, and the utmost pleasure and advantage to the pupils.

Every school-house should be provided with a room, where the pupils can resort, before and after school and during recess, in unpleasant weather; with a shed, or other suitable place for fuel, which should be supplied of the best quality, in due season, and in the right condition for use; with a well, or other mode of furnishing pure water; and with a bell, large enough to be heard over the district from which the school is gathered.

No department of school architecture among us requires such immediate and careful attention as the arrangement and construction of privies. In none is there now such niggardly economy, or outrageous disregard to health, modesty, and morals, practiced. Over this portion of the school premises the most perfect neatness, seclusion, order, and propriety should be enforced, and every thing calculated to defile the mind, or wound the delicacy or modesty of the most sensitive should be immediatly removed, and any vulgarity in respect to it, on the part of the pupils, should receive attention in private, and be made a matter of parental advice and co-orporation. Neglect in this particular, on the part of the community, in providing suitable buildings and premises, or of the teacher, in enforcing proper regulations, has been followed with the most disastrous results to the health and happiness of thousands of pupils.

There should be one provided for each sex, widely separated from each other—inclosed from the general play ground,—and accessible by a covered walk, and, if practicable, from the basement, or clothes-room appropriated to each sex, and kept locked, except during school-hours. They should be ventilated, and frequently and thoroughly cleansed. Where water closets can be introduced, it will be a wise economy to adopt them. The following plan is copied from "*Richson's School-Builder's Guide.*"



A—Cross sections, without the end wall and entance.

a—The seat, with water channel to the level of the floor. At the back and front of *a*, dipping 1 *inch* into the water, is a Valentia slate, 1 *inch* thick. The channel, although here drawn angular, would be better of an oval form.

b—The level of floor.

B—Longitudinal section.

C—Cistern, supplied by ball tap, with sliding valve to lift and flush the channel G.

E—(With line above) a sloping Valentia slate, 1½ feet high, to form urinal, dipping 1 *inch* into the water.

n—A sliding valve to lift and let off water.

m—An inclined trough or drain to carry off water when the channel is flushed by opening valves *c* and *n*.

d—An escape pipe, bent to form a trap at *d*, fixed at the level of the floor, behind the girt in the corner of E, to carry off superfluous water.

The valves, at *c*, and *n*, being opened *every evening*, or more frequently, will thoroughly cleanse the channel; and the valve at *n* being first shut, the channel G may be filled before *c* is closed.

1. PLANS OF SCHOOL-HOUSES RECOMMENDED BY PRACTICAL TEACHERS AND EDUCATORS.

PLAN, &c. RECOMMENDED BY DR. ALCOTT, AND BY THE AMERICAN INSTITUTE OF INSTRUCTION.

In 1830 the American Institute of Instruction offered a premium for the best Essay "*On the Construction of School-houses,*" which was awarded in Aug. 1831, to Dr. William A. Alcott, of Hartford. The Prize Essay* was published in the proceedings of the Institute of the same year, together with a "*Plan for a Village School-house,*" devised by a Committee of the Directors of the Institute.

The plan of the school-room recommended by Dr. Alcott, although less complete in some of its details, is substantially the same as that recommended by Mr. Mann, and can be easily understood by reference to the cut of the latter on the opposite page. The room, to accommodate 56 pupils each, with a separate seat and desk, and from 8 to 16 small children with seats for two, should be 40 ft. long by 30 wide. The teacher's platform occupies the north end of the room, towards which all the scholars face when in their seats. Each scholar is provided with a seat and desk, (each 2 ft. by 14 inches,) the front of one desk constituting the back of the seat beyond. The top of the desk is level, with a box and lid for books, &c. The aisles on each side of the room, are 2 feet wide, and those between each range of seats and desk is 18 inches. A place for recitation 8 feet wide extends across the whole width of the room, in the rear, with movable blackboards. The room can be warmed by stove, placed as in the cut referred to, or by air heated by furnace or stove in the basement. The room is ventilated by openings in the ceiling. A thermometer, library, museum, &c., are to be furnished.

In the "*Plan for a village School-house,*" the school-room is 48 ft. long by 35 wide, to accommodate eighty scholars with separate seats. The details of the arrangements are nearly the same as were at that date recommended for schools on the Lancasterian plan, and as are now recommended by the British and Foreign School Society—except that the floor of the room is level, and the seats are provided with backs. In the explanations accompanying the plan, the Directors recommend, that in villages and populous neighborhoods, the children be classified according to age and attainment into a series of schools, and that appropriate rooms for each school be provided.

PLAN RECOMMENDED BY HORACE MANN.

In 1838, Mr. Mann submitted a Report on School-houses, supplementary to his "First Annual Report as Secretary of the Massachusetts Board of Education," which discusses the whole subject of school architecture with great fulness and ability. This document may be found entire in the Massachusetts Common School Journal, Vol 1., and nearly so, in the Connecticut Common School Journal, Vol. 1., and the New York District School Journal, Vol. 3. It fixed public attention on the defects of these edifices, and has led to extensive improvement all over that Commonwealth. During the five years immediately following its publication, over $516,000 were expended in the construction of 405 new houses, including land, fixtures, &c., and over $118,000, in the substantial repairs of 429 more. The larger portion of the first sum has been expended in the cities and large villages in the eastern part of the state, where may now be seen specimens of the best school-houses, and the best schools, in our country. The following plan embodies substantially the views submitted by Mr. Mann, in his Report.

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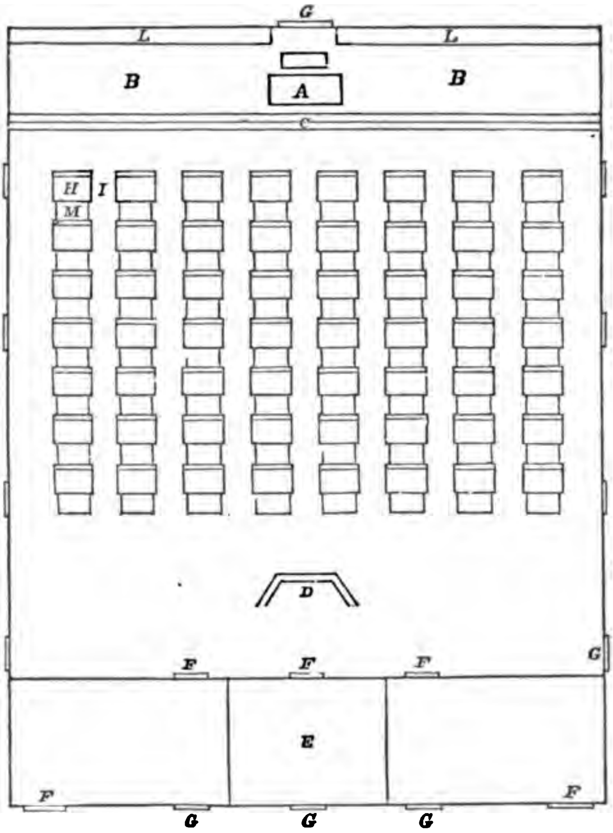
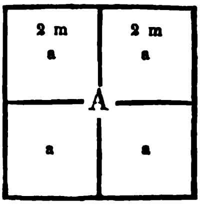
* This Essay of Dr. Alcott was the pioneer publication on this subject. It was followed in 1833 by a "*Report on School-houses*" prepared by the Rev. G. B. Perry, and published by the Essex County Teacher's Association. This last is a searching and vigorous exposition of the evils resulting from the defective construction, and arrangements of school-houses, as they were at that date almost universally found.



A. Represents the teacher's desk. *B B*. Teacher's platform, from 1 to 2 ft. in height. *C*. Step for ascending the platform. *L L*. Cases for books, apparatus, cabinet, &c. *H*. Pupils' single desks, 2 ft. by 18 inches. *M*. Pupils' seat, 1 ft. by 20 inches. *I*. Aisles, 1 ft. 6 inches in width. *D*. Place for stove, if one be used. *E*. Room for recitation, for retiring in case of sudden indisposition, for interview with parents, when necessary, &c. It may also be used for the library, &c. *F F F F F*. Doors into the boys' and girls' entries—from the entries into the school-room, and from the school-room into the recitation room. *G G G G*. Windows. The windows on the sides are not lettered.

For section of seat and desk constructed after Mr. Mann's plan, see p. 47. To avoid the necessity of fitting up the same school-room for old and young, and the inefficiency of such country schools as we now have, Mr. Mann proposed in this Report a union, for instance of four districts which did not cover more than four miles square, and the erection of four primary school-houses, (a a a a) for the younger children of each district, to be taught by female teachers, and one central or high school, (A) for the older children of the four districts, taught by a well qualified male teacher. This plan is recommended for its wise use of the means of the districts, and the efficiency of the instruction given.



PLANS, &c., RECOMMENDED BY GEORGE B. EMERSON.

The "School and Schoolmaster,"* contains a very valuable chapter on school-houses, by Mr. Emerson, the President of the American Institute o. Instruction, illustrated by drawings, which, with the permission of the authors and publishers are introduced here. The whole chapter, as the production of one of the most eminent teachers and writers on education of the age, should be studied by every one who would become thoroughly acquainted with he subject. Most of his valuable suggestions are subjoined.

Situation.—So much do the future health, vigor, taste, and moral principles f the pupil depend upon the position, arrangement, and construction of the school-house, that everything about it is important. When the most desirable situation can be selected, and the laws of health and the dictates of taste may be consulted, it should be placed on firm ground, on the southern declivity of a gently sloping hill, open to the southwest, from which quarter comes the pleasantest winds in summer, and protected on the northeast by the top of the hill or by a thick wood. From the road it should be remote enough to escape the noise, and dust, and danger, and yet near enough to be easily accessible by a path or walk, always dry. About it should be ample space, a part open for a play-ground, a part to be laid out in plots for flowers and shrubs, with winding alleys for walks. Damp places, in the vicinity of stagnant pools or unwholesome marshes, and bleak hilltops or dusty plains, should be carefully avoided. Tall trees should partially shade the grounds, not in stiff rows or heavy clumps, but scattered irregularly as if by the hand of Nature. Our native forests present such a choice of beautiful trees, that the grounds must be very extensive to afford room for even a single fine specimen of each; yet this should, if possible, be done, for children ought early to become familiar with the names, appearance, and properties of these noblest of inanimate things. The border of a natural wood may often be chosen for the site of a school; but if it is to be thinned out, or if trees are to be planted, and, from limited space, a selection is to be made, the kingly, magnificent oaks, the stately hickories, the spreading beech for its deep mass of shade, the maples for their rich and abundant foliage, the majestic elm, the useful ash, the soft and graceful birches, and the towering, columnar sycamore, claim precedence. Next may come the picturesque locusts, with their hanging, fragrant flowers; the tulip-tree; the hemlock, best of evergreens; the celtis, or sweet gum; the nyssa, or tupelo, with horizontal branches and polished leaves; the walnut and butternut, the native poplar, and the aspen.

Of extremely beautiful American shrubs, the number is so great that I have no room for a list. What place intended to form the taste of the young, should be without the kalmias, rhododendrons, cornels, roses, viburnums, magnolias, clethras, honeysuckles, and spiræas? And whoever goes into the woods to gather these, will find a multitude of others which he will hardly consent to leave behind. The hilltop should be planted with evergreens, forming, at all seasons, a barrier against the winds from the north and east.

Of the flower plots, little need be said. They must be left to the taste of the teacher, and of cultivated persons in the district. I can only recommend our wild American plants, and again remind the reader, that there is hardly a

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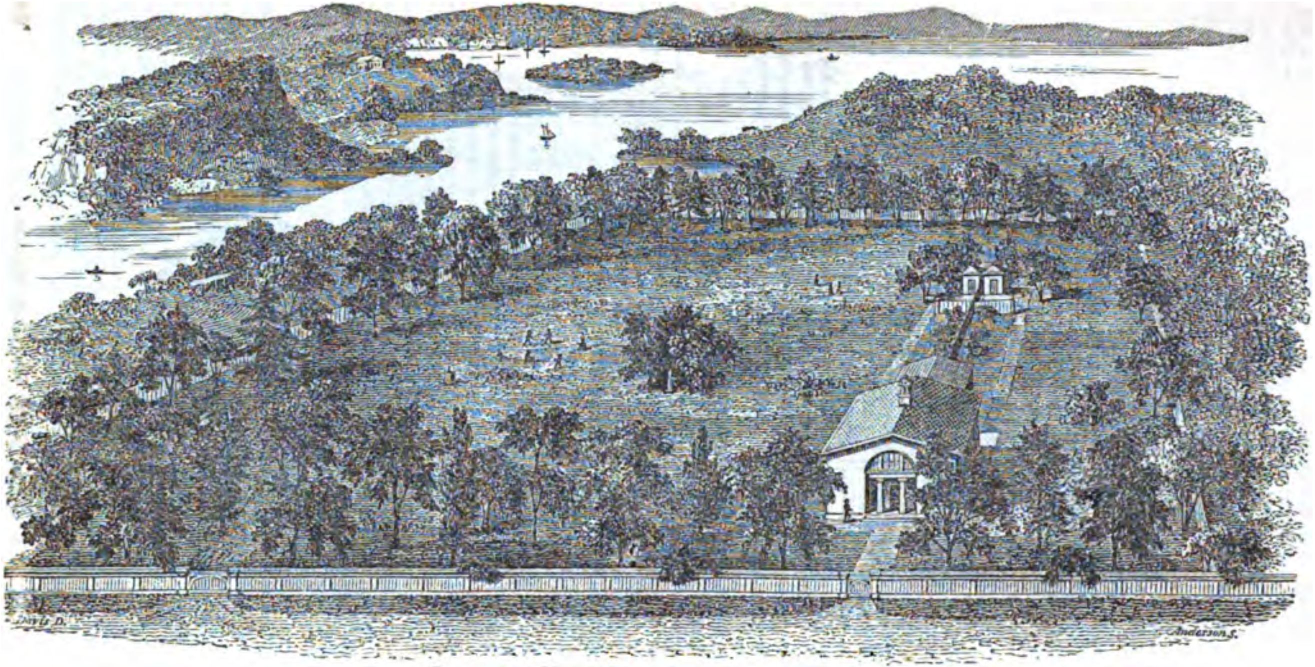
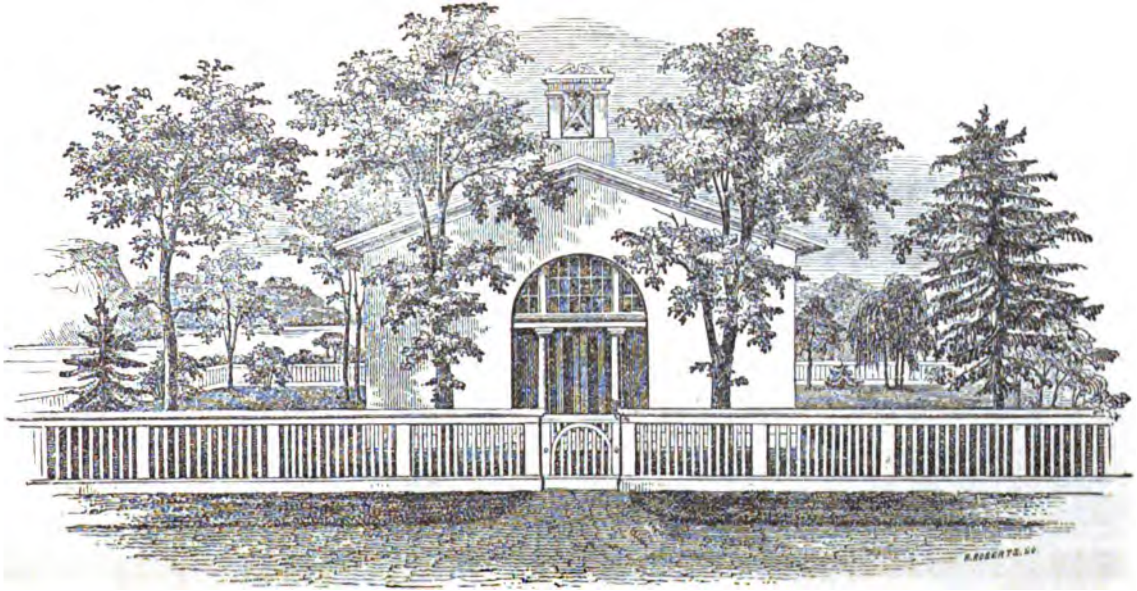
* The "*School and Schoolmaster*," a Manual for the use of Teachers, Employers, Trustees, Inspectors, &c., &c., of Common Schools. Part I. By Alonzo Potter, D. D. Part II. By George B. Emerson. pp. 552. Harper & Brothers, 82 Cliff street, New York. Price, $1.

This excellent treatise, the most valuable contribution yet made to the educational literature of our country, was prepared and published originally at the expense of James Wadsworth, Esq., of Geneseo, N. Y., in 1842. By him a copy was presented to each of the 11,000 school districts of that state. Following this noble example, the Hon. Martin Brimmer, the present mayor of the city of Boston, caused to be printed, at his expense, such a number of copies as would supply one copy each to all the school districts, and one copy each to all the boards of school committee men, in Massachusetts.

The work should be scattered broadcast through every state in the Union. In large orders, or for gratuitous distribution, it can be had of the publishers at a very low rate.


Davis D.
Anderson S.

Perspective of School-house, Outbuildings, and Grounds


R. ROBERTS, Sc.

Front Projection of a Schoolhouse with Trees, Shrubbery, &c.

country town in New York or New England, from whose woods and meadows a hundred kinds of flowers might not be transplanted, of beauty enough to form the chief ornament of a German or English garden, which are now neglected only because they are common and wild. Garden flowers need not be excluded; and if either these or the former are cultivated, the great object, to present something to refine and inform the taste, will be, in some degree, accomplished.

If proper inclosed play-grounds are provided, the master may often be present at the sports, and thus become acquainted with the character, of his pupils. If children are compelled to resort to the highway for their amusements, we ought not to wonder that they should be contaminated by the vices, brawlings, and profanities, which belong to frequenters of highways.

Size.—The room should be sufficiently large to allow every pupil, 1. to sit comfortably at his desk; 2. to leave it without disturbing any one else; 3. to see explanations on his lessons, and to recite without being incommoded or incommoding others; 4. to breathe a wholesome atmosphere.

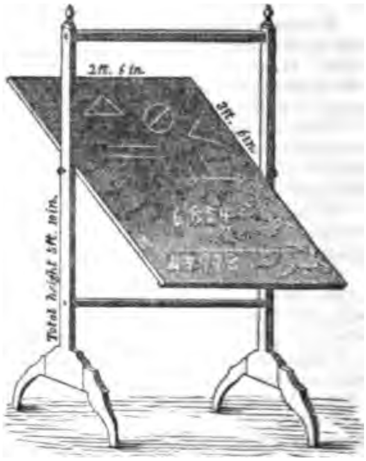
If the first three objects are fully provided for, the space on the floor will be sufficient. But to secure the advantage of an adequate supply of air, the room must be not less than 10, and, if possible, 12 or 14, feet high.

Arrangement.—For the accommodation of 56 scholars, so as to give ample room for moving, for recitations, and for air, the dimensions of the house should be 38 feet by 25, and 10 feet in height within. This will allow an entry of 14 feet by 7½, lighted by a window, to be furnished with wooden pegs for the accommodation of clothes; a wood-room, 10 feet by 7½, to serve also as an entry for girls at recess, or as a recitation room; a space behind the desks 8 feet wide, for fireplace, passage, and recitations, with permanent seats against the wall 10 or 11 inches wide; a platform, 7 feet wide, for the teacher, with the library, blackboards, globes, and other apparatus for teaching; the remaining space to be occupied by the desks and seats of the scholars. For every additional 8 scholars the room may be lengthened 2½ feet. The desks and seats for scholars should be of different dimensions. A desk for two may be 3½ or 4 feet long. If the younger children are placed nearest the master's desk, the desks in the front range may be 13 inches wide, the two next 14, the two next 15, and the two most remote 16, with the height, respectively, of 24, 25, 26, and 27 inches. The seats should vary in like manner. Those in the front range should be 10 inches wide, in the two next 10½, in the two next 11, in the two last 11½ or 12; and 13½, 14, 15, and 16 inches, respectively, high. All edges and corners are to be carefully rounded.

It is very desirable that the north end of the school-house be occupied by the master's desk; that this end be a dead wall; that the front be towards the south; and that the desks be so placed that the pupils, as they sit at them, shall look towards the north. The advantages of this arrangement are, 1. that the scholars will obtain more correct ideas upon the elements of geography, as all maps suppose the reader to be looking northward; 2. the north wall, having no windows, will exclude the severest cold of winter; 3. the scholars will, in this case, look towards a dead wall, and thus avoid the great evil of facing a glare of light; or, if a window or two be allowed in the north wall, the light coming from that quarter is less vivid, and, therefore, less dangerous, than that which comes from any other; 4. the door, being on the south, will open towards the winds which prevail in summer, and *from* the cold winds of winter.

If, from necessity, the house must front northward, the master's desk should be still in the north end of the room, and the scholars, when seated, look in that direction.

The end of the room occupied by the master should be fitted with shelves for a library and for philosophical apparatus and collections of natural curiosities, such as rocks, minerals, plants, and shells, for globes and for blackboards. The books, apparatus, and collections should be concealed and protected by doors, which may be made perfectly plain and without panels, so as to be painted black and serve as blackboards. They may be conveniently divided by pilasters into three portions, the middle one for books, the others for apparatus and collections. On one of the pilasters may be the clock; on the other a barometer and thermometer; on shelves in the corners, the globes, and over the library in the center, the study card. One of the pilasters may form part of the ventilating tube. The master's platform may be raised eight inches. For all these purposes, the space in front of the ranges of scholars' desks, should be not less than seven or eight feet wide; ten or twelve would be much better. The sides and front of this space should be furnished with seats ten or eleven inches wide, for recitation. By means of a large movable blackboard, this space may be, in case of need, converted into two, so that two classes may recite at a time. In a school intended to accommodate more than 64 pupils, there ought also to be a space for recitation in the south end of the room, separable by movable blackboards into two.

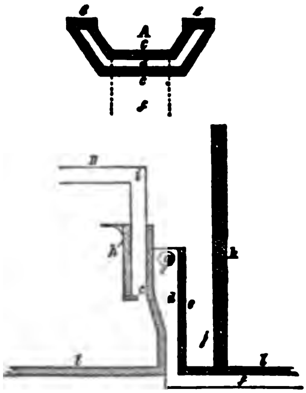

3ft. 6in.
3ft. 6in.
Total height 5ft. 9in.

Movable Blackboard.

The entry should be lighted by a window, and be furnished with wooden or iron pins for the accommodation of hats, bonnets, and cloaks; and there should be a wood-closet large enough to contain two or three cords of wood, which may, if it is preferred, be used as a recitation room.

By making the ceiling of the entry and wood-closet only seven feet high, two commodious rooms for recitation may be formed above them, lighted from the window over the front door, and accessible by stairs from within the school-room.

Warming.—In a suitable position, pointed out in the plates, near the door, let a common brick fireplace be built. Let this be inclosed, on the back and on each side, by a casing of brick, leaving, between the fireplace and the casing, a space of four or five inches, which will be heated through the back and jambs. Into this space let the air be admitted from beneath by a box 24 inches wide and 6 or 8 deep, leading from the external atmosphere by an opening beneath the front door, or at some other convenient place. The brick casing should be continued up as high as six or eight inches above the top of the fireplace, where it may open into the room by lateral orifices, to be commanded by iron doors, through which the heated air will enter the room. If these are lower, part of the warm air will find its way into the fireplace. The brick chimney should



Fireplace.

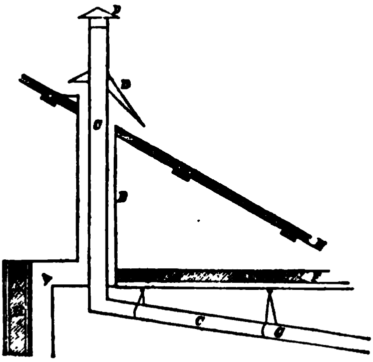
A. Horizontal section. B. Perpendicular section. *c*. Brick walls, 4 inches thick. *d*. Air space between the walls. *e*. Solid fronts of masonry. *f*. Air box for supply of fresh air, extending beneath the floor to the front door. *g*. Openings on the sides of the fireplace, for the heated air to pass into the room. *h*. Front of the fireplace and mantelpiece. *i*. Iron smoke flue, 8 inches diameter. *j*. Space between the fireplace and wall. *k*. Partition wall. *l*. Floor.

rise at least two or three feet above the hollow back, and may be surmounted by a flat iron, soap-stone, or brick top, with an opening for a smoke-pipe, which may be thence conducted to any part of the room. The smoke-pipe should rise a foot, then pass to one side, and then over a passage, to the opposite extremity of the room, where it should ascend perpendicularly, and issue above the roof. The fireplace should be provided with iron doors, by which it may be completely closed.

The advantages of this double fireplace are, 1. the fire, being made against brick, imparts to the air of the apartment none of the deleterious qualities which are produced by a common iron stove, but gives the pleasant heat of an open fireplace; 2. none of the heat of the fuel will be lost, as the smoke-pipe may be extended far enough to communicate nearly all the heat contained in the smoke; 3. the current of air heated within the hollow back, and constantly pouring into the room, will diffuse an equable heat throughout every part; 4. the pressure of the air of the room will be constantly outward, little cold will enter by cracks and windows, and the fireplace will have no tendency to smoke; 5. by means of the iron doors, the fire may be completely controlled, increased or diminished at pleasure, with the advantages of an air-tight stove. For that purpose, there must be a valve or slide near the bottom of one of the doors.

If, instead of this fireplace, a common stove be adopted, it should be placed above the air-passage, which may be commanded by a valve or register in the floor, so as to admit or exclude air.

Ventilation.—A room warmed by such a fireplace as that just described, may be easily ventilated. If a current of air is constantly pouring in, a current of the same size will rush out wherever it can find an outlet, and with it will carry the impurities wherewith the air of an occupied room is always charged. For the first part of the morning, the open fireplace may suffice. But this, though a very effectual, is not an economical ventilator; and when the issue through this is closed, some other must be provided. The most effective ventilator for throwing out foul air, is one opening into a tube which incloses the smoke-flue at the point where it passes through the roof. Warm air naturally rises. If a portion of the smoke-flue be inclosed by a tin tube, it will warm the air within this tube, and give it a tendency to rise. If, then, a wooden tube, opening near the floor, be made to communicate, by its upper extremity, with the tin tube, an upward current will take place in it, which *will always act whenever the smoke-flue is warm.*



[Scale 8 feet to an inch.]

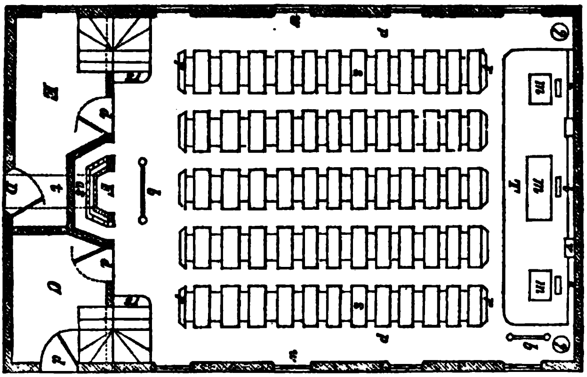
Ventilating Apparatus.

A. Air box, 1 foot square, or 24 inches by 6, covered by the pilaster, and opening at the floor, in the base of the pilaster. B. Round iron tube 15¼ inches in diameter, being a continuation of the air box, through the center of which passes C. The smoke flue, 8 inches in diameter. D Caps to keep out the rain.

It is better, but not absolutely essential, that the opening into the wooden tube be near the floor. The carbonic acid thrown out by the lungs rises, with the warm breath, and the perspirable matter from the skin, with the warm, invisible vapor, to the top of the room. There both soon cool, and sink towards the floor; and both carbonic air and the vapor bearing the perspirable matter are pretty rapidly and equally diffused through every part of the room.

Seats and Desks.—Instead of a seat and desk for each pupil, Mr. Emerson recommends that two seats should be contiguous. In his drawings, the desk is perfectly level like a table, and the back to the seat is perpendicular.

SCHOOL FOR ONE HUNDRED AND TWENTY PUPILS.



51 feet by 31 feet outside.] [Scale 16 feet to the inch.

D. Entrance door. E. Entry. F. Fireplace. C. Wood closet. T. Teacher's platform. *a*. Apparatus shelves. *t*. Air tube beneath the floor. *d*. Doors. *g*. Globes. *l*. Library shelves. *m*. Master's table and seat. *p*. Passages. *r*. Recitation seats. *s*. Scholars' desks and seats. *r s*. Stairs to recitation rooms in the attic. *v*. Ventilator. *w*. Windows. *b*. Movable blackboard. *a s*. Air space behind the fireplace.

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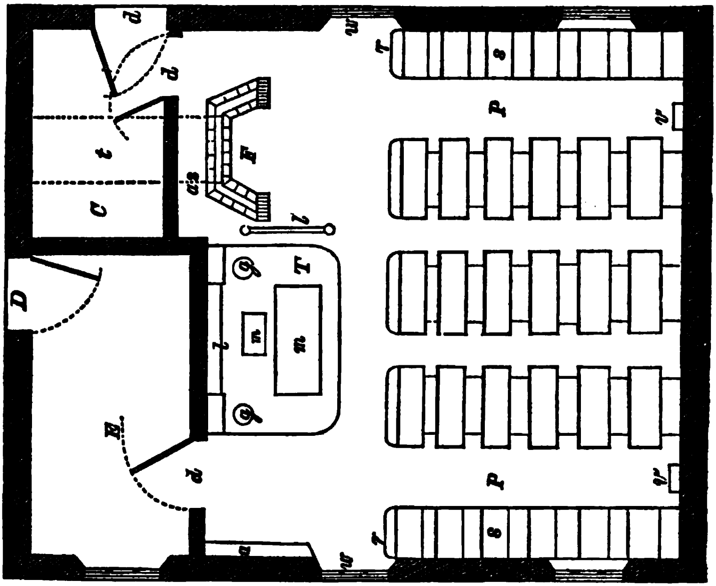
SCHOOL FOR FORTY-EIGHT PUPILS.



24 feet by 28 feet outside.] [Scale 8 feet to the inch.

D. Entrance door. E. Entry. F. Fireplace. C. Wood closet, or recitation room T. Teacher's platform. *a*. Apparatus shelves. *t*. Air tube beneath the floor. *d*. Doors *g*. Globes. *l*. Library shelves. *m*. Master's table and seat. *p*. Passages. *r*. Recitation seats. *s*. Scholars' desks and seats. *v*. Ventilator. *w*. Windows. *b*. Movable blackboard. *a*. *s*. Air space behind the fireplace.
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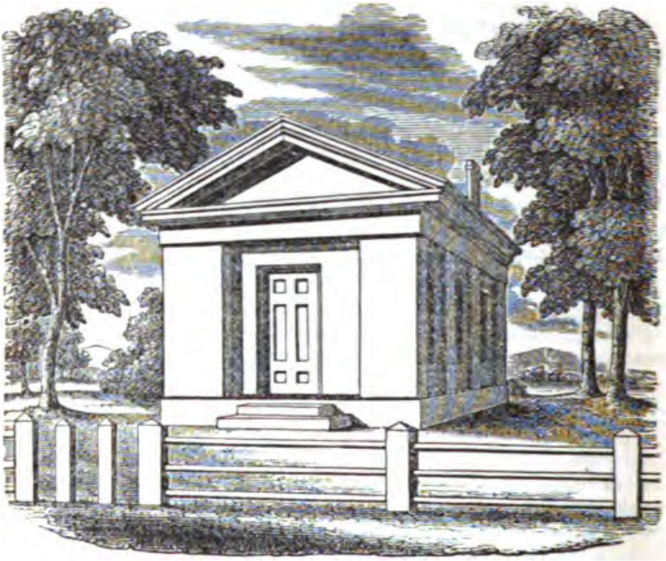
PLANS OF SCHOOL-HOUSES RECOMMENDED BY PRACTICAL EDUCATORS, OR RECENTLY ERECTED.

Under this head will be found plans and descriptions of a few of the best school-houses, which have been recently erected in Connecticut and Rhode Island, for schools of different grades, from designs or directions furnished by the author of this treatise. They are not presented as faultless specimens of school architecture, but as embracing, each, some points of excellence, either in style, construction, or arrangement. Although the author, particularly as Commissioner of Public Schools for Rhode Island, was consulted in almost every instance by the local building committee, and was always gratified in having opportunities to furnish plans, or make suggestions,—yet he was seldom able to persuade the committee or the carpenters to carry out his plans and suggestions thoroughly. Something would be taken from the height, or the length, or the breadth ;—some objections would be made to the style of the exterior or the arrangement of the interior ;—and particularly the plans recommended for securing warmth and ventilation were almost invariably modified, and are in many instances entirely neglected. He desires, therefore, not to be held responsible for the details of any one house as it now stands,—for, being thus held responsible, he should probably receive credit for improvements which others are as much entitled to as himself, and should in more instances be held accountable for errors of taste, and deficiencies in internal arrangements, against which he protested with those having charge of the construction. He wishes the reader to bring all the plans published in this volume, no matter by whom recommended, or where erected, to the test of the principles set forth on pages 9, 10, and 11. If in any particular they fall short of the standard therein established, so far they differ from the designs which the author desires to see followed in houses erected under his own eye. But, with some reservation, most of the school-houses recently erected in Rhode Island, (and the same may be said of the new houses in Hartford, described in this volume,) can be pointed to as embracing many improvements in school architecture. Although the last state in New England to enter on the work of establishing a system of common schools, it is believed, she has now a system in operation not inferior in efficiency to any of her sister states. Be that as it may, Rhode Island can now boast of more good school-houses, and fewer poor ones, in proportion to the whole number, than any other State—more than one hundred and fifty thousand dollars having been voluntarily voted for this purpose in less than three years, by school districts, not including the city of Providence.

To Thomas A. Teft, Esq., Architect, of Providence, much credit is due for the taste which he has displayed in the designs furnished by him, and for the elevations which he drew for plans furnished or suggested by the Commissioner. He should, not, however, be held responsible for the alterations made in his plans by the committees and carpenters having charge of the erection of the building. With all their imperfections of execution, Mr. Teft's plans are among the best specimens of School Architecture.

PLAN AND DESCRIPTION OF SCHOOL-HOUSE IN WINDSOR, CT.

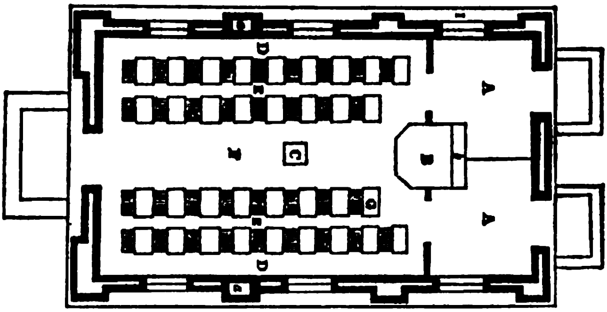


The building stands 60 ft. from the highway, near the center of an elevated lot which slopes a little to the south and east. Much the larger portion of the lot is in front, affording a pleasant play ground, while in the rear there is a woodshed, and other appropriate buildings, with a separate yard for boys and girls. The walls are of brick, and are hollow, so as to save expense in securing the antaes or pilasters, and to prevent dampness. This building is 33 ft. 6 inches long, 21 ft. 8 inches wide, and 18 ft. 9 inches high from the ground to the eaves, including 2 ft. base or underpinning.

The entries A A, one for boys and the other for girls, are in the rear of the building, through the woodshed, which, with the yard, is also divided by a partition. Each entry is 7 ft. 3 inches, by 9 ft. 3 inches, and is supplied with a scraper and mat for the feet, and shelves and hooks for outer garments.

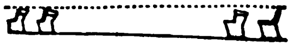
The school-room is 24 ft. 5 inches long, by 19 ft. 4 inches wide, and 15 ft. 6 inches high in the clear, allowing an area of 472 ft. including the recess for the teacher's platform, and an allowance of 200 cubic feet of air to a school of 36.

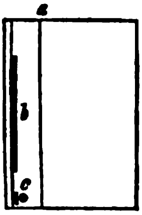
The teacher's platform B, is 5 ft. 2 inches wide, by 6 ft. deep, including 3 ft. of recess, and 9 inches high. On it stands a table, the legs of which are set into the floor, so as to be firm, and at the same time movable, in case the platform is needed for declamation, or other exercises of the scholars. Back of the teacher is a range of shelves *b*, already supplied with a library of near 400 volumes, and a globe, outline maps, and other apparatus. On the top of the case is a clock. A blackboard 5 ft. by 4, is suspended on weights, and steadied by a groove on each end, so as to admit of being raised and lowered by the teacher, directly in front of the book case, and in full view of the whole school. At the bottom of the blackboard is a trough to receive the chalk and the sponge, or soft cloth.



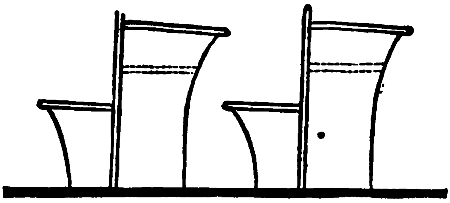
The passages D D, are 2 ft. wide, and extend round the room; E E are 15 inches, and allow of easy access to the seats and desks on either hand. F is 5 ft. 8 inches, and in the center stands an open stove C, the pipe of which goes into one of the flues, *a*. The temperature is regulated by a thermometer.

Each pupil is provided with a desk G, and seat H, the front of the former, constituting the back or support of the latter, which slopes 2½ inches in 16. The seat also inclines a little from the edge. The seats vary in height, from 9½ inches to 17, the youngest children occupying those nearest the platform. The desks are 2 ft. long by 18 inches wide, with a shelf beneath for books, and a groove on the back side *b*, (Fig. 4) to receive a slate, with which each desk is furnished by the district. The upper surface of the desk, except 3 inches of the most distant portion, slopes 1 inch in a foot, and the edge is in the same perpendicular line with the front of the seat. The level portion of the desk has a groove running along the line of the slope *a*, (Fig. 4) so as to prevent pencils and pens from rolling off, and an opening *c*, (Fig 8) to receive an inkstand, which is covered by a metallic lid.





Top of Desk.



Section of Seat and Desk.

The windows, I, three on the north and three on the south side, contain each 40 panes of 8 by 10 glass, are hung (both upper and lower sash) with weights so as to admit of being raised or lowered conveniently. The sills are three feet from the floor. Those on the south side are provided with curtains and blinds.

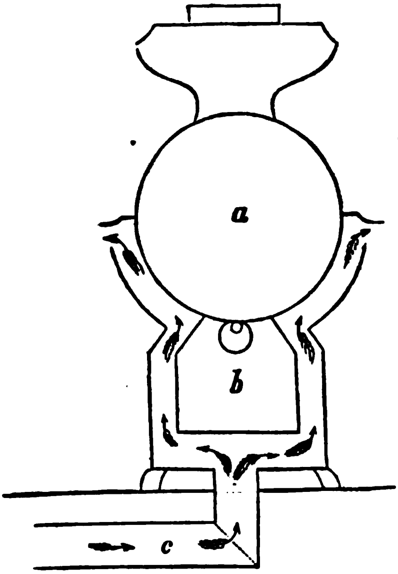
The proper ventilation of the room is provided for by the lowering of the upper sash, and by openings 14 inches by 18, at the floor and ceiling, into a flue, (Fig. 2.) *a*, which leads into the open air. These openings can be enlarged, diminished, or entirely closed by a shutter controlled by a cord.

Plan of School-house in Meadow District, in Bloomfield, Conn

The new school-house in Meadow District, in the town of Bloomfield, for location, neatness, mode of seating, warming, and ventilation, is a good specimen of a cheap, convenient, and attractive edifice for a small country district. It is built of brick, and the cost, excluding the land, and including fences, appendages, and furniture, was about $500. The style and arrangement of the seats and desks are indicated in Figs. 3 and 4. The building is 30 feet by 20. The district is indebted mainly to Hon. Francis Gillette for his zeal and determination in getting up the plan, and superintending the work.

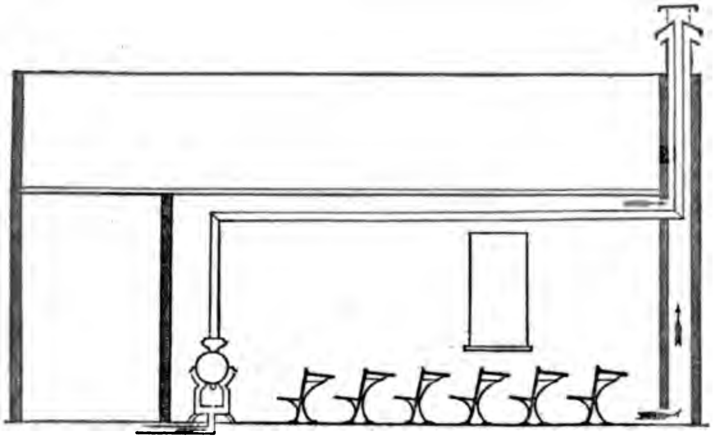
The room is heated by *Mott's Ventilating School Stove*, designed both for wood and hard coal. Fresh air is introduced from outside of the building by a flue beneath the floor, and is warmed by passing along the heated surfaces of the stove as indicated in the following section.

Fig. 2.



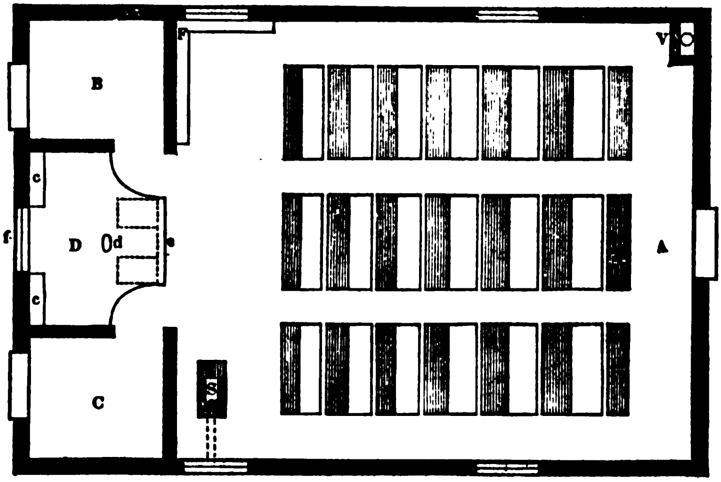
A. A chamber, for coal or wood.
B. A revolving grate with a cam motion, by which the ashes are easily detached and made to drop into the ash-pit below.
C. Ash-pit, by which also the draught can be regulated, and the stove made an air-tight.
D. Duct, or flue under the floor, by which fresh air from without is admitted under and around the stove, and circulates in the direction indicated by the arrows.

The smoke-pipe is carried in the usual way, high enough to prevent any injurious radiation of heat upon the heads of the pupils below, to the centre of the opposite end of the room, where, after passing through the ceiling, it enters the ventilating flue, which, commencing at the floor, is carried up through the attic and out above the roof, as shown in Figures 3 and 4. The heat of the smoke-pipe produces a lively upward current of the air in the upper portion of the ventilating flue, sufficient to draw off the lower stratum of air near the floor, and at the same time draw down, and diffuse equally through the room, the fresh air which is introduced and warmed by the stove at the opposite end.

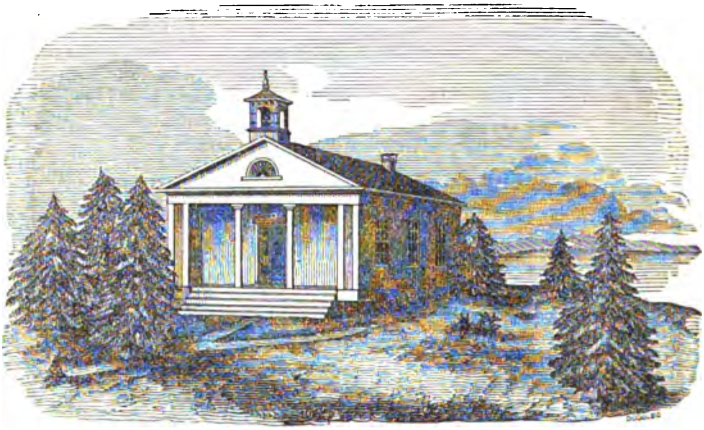


A—Front entrance.
B—Girls' Entrance and lobby.
C—Boys' do. do.
D—Teachers' platform.
E—Seat and desk, for the pupils.
S—Mott's ventilating school stove.
V—Flue for ventilation.

F—Seats for classes at recitation.
d—Teacher's desk.
e—Library of reference in front of teacher's desk.
c—Closets for school library and apparatus.
f—Fence dividing back yard.



PLAN OF DISTRICT SCHOOL-HOUSE IN BARRINGTON, R. I.



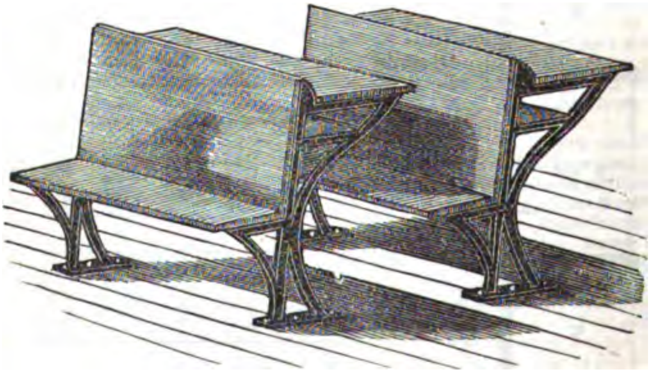
The above cut represents in perspective the new school-house in District No. 2, in the town of Barrington, Rhode Island—the most attractive, convenient, and complete structure of the kind in any agricultural district in the State—and, it is believed, in New England.

The house stands back from the highway in a lot, of an acre in extent, and commands an extensive view up and down Narraganset Bay, and of the rich cultivated fields for miles in every other direction.

The building is 40 feet long by 25 wide, and 12 feet high in the clear, and is built after working plans drawn by Mr. Teft, of Providence.

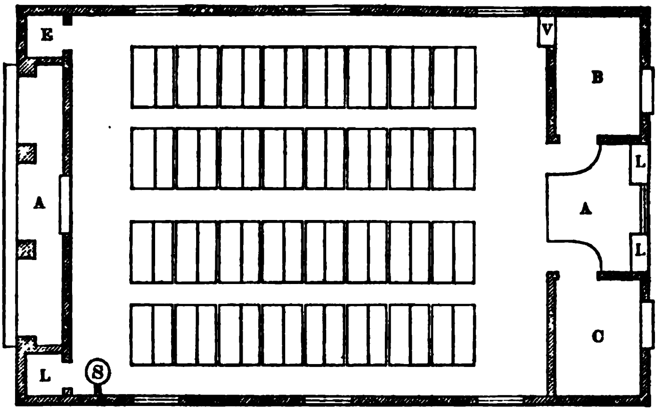
The school-room is calculated to accommodate 64 pupils, with seats and desks each for two pupils, similar to the folowing cut, and arranged as in Figure 3.

The end-piece, or supports, both of the desk and seat, are of cast-iron, and the wood-work is attached by screws. They are made of eight sizes, giving a seat from ten inches to seventeen, and a desk at the edge next to the scholar from seventeen to twenty-six inches from the floor.



Each pupil, when properly seated, can rest his feet on the floor without the muscle of the thigh pressing hard upon the front edge of the seat, and with a support for the muscles of the back.

The yards and entrance for the boys and girls are entirely separate, and each is appropriately fitted up with scraper, mats, broom, water-pails, sink, hooks and shelves.



A—Front entrance.
B—Girls' entrance and lobby, fitted up with mats, scrapers, hooks, shelves.
C—Boys' entrance.
D—Teacher's platform.
S—Boston Ventilating Stove.
V—Flue for ventilation surmounted, by Emerson's Ejector.
L—Cases for library.
E—Closets for apparatus, &c.

The school is well supplied with blackboards, maps, globes, and diagrams, and such other instrumentalities as are necessary and useful in the studies usually taught in a district school.

There is abundance of unoccupied space around the sides of the room and between the ranges of desks to allow of the free movements of the teacher and of the pupils, in passing to and from their seats.

There is also a district library of about 600 volumes, containing a large number of books of reference, such as Dictionaries, Encyclopedia, and a variety of the best text books in the several studies of the school, to enable the teacher to extend his knowledge, and illustrate his recitations by additional information.

There are about one hundred volumes selected with reference to the youngest class of children, and about 400 volumes in the different departments of useful knowledge, calculated for circulation among the older pupils, in the families of the district generally.

The maps, apparatus and library were purchased by the Commissioner ot Public Schools at an expense of $250, which was contributed by five or six individuals. The building, furniture and land, cost about $1200.

The school-room is warmed and ventilated under the direction of Mr. Gardner Chilson, Boston, by one of the *Boston Ventilating Stoves*, and by a flue constructed similar to those recently introduced into the Boston Public School houses by Dr. Henry G. Clark, and surmounted by Emerson's Ejector.

A cut and description of this stove, and of *Mott's Ventilating Stove* for burning wood as well as coal, is given on the next page.

The flue for ventilation is carried up in the partition wall, and is constructed of well seasoned boards, planed smooth on the inside.

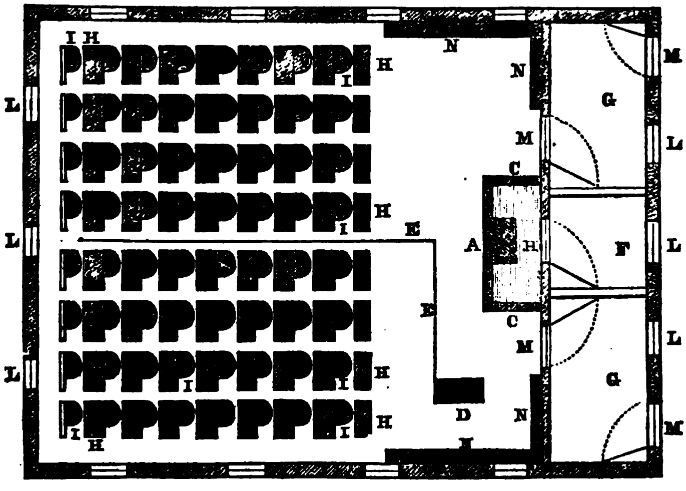
PLANS OF SCHOOL-HOUSES RECENTLY ERECTED IN NEW HAMPSHIRE.

The following plans, and the descriptions of the same, are taken, by permission, from the "*Third Annual Report of the Commissioner of Common Schools* (HON. R. S. RUST,) *to the Legislature of New Hampshire, January*, 1849."

PLAN OF DISTRICT SCHOOL-HOUSE IN DUBLIN, N. H.

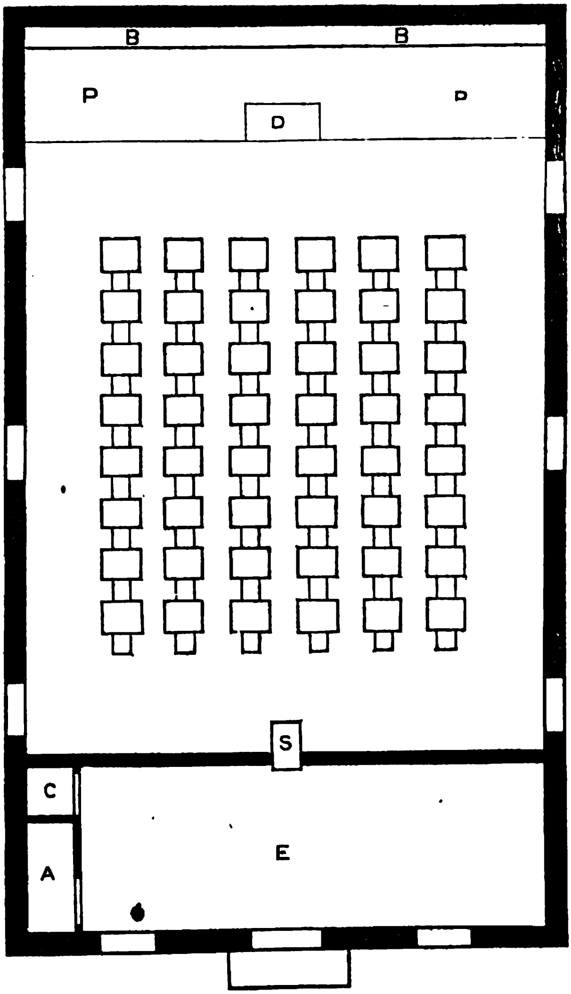
The building is 42 by 32 feet on the ground, and 11 feet high in the clear. The school-room of 29 by 35 feet inside, and is furnished with 64 seats (I,I,I,) and as many desks (H,H,H.) The desks are made of birch board, and painted green, each 2 feet long and from 10 to 18 inches wide, and are all numbered. The supports at the end of the desks are framed down through the floor into the sleepers, or joints under the floor. The seats are in the form of wooden chair bottoms, and are 16 inches down to 10 in height, and are placed at the left hand of the writing desk, so as to make it convenient for the scholar in writing, and give him space to stand within the line of his desk. The outside aisles are 18 inches, the center 24 inches, and the outer 16 inches wide. There are movable seats (N,N,) in front, and on either side of the teacher, for recitation. The entrances (G,G,), one for boys and one for girls, are fitted up for hats, bonnets, &c., and can be used for recitation rooms. Back of the teacher's platform (A,) is a small room for a library, apparatus, and the use of the teacher. The room is heated by one of the Worcester Common School Stoves, which cost about $18. By means of a flue under the floor, the air is introduced beneath the stove, and circulates through heated tubes before it is admitted into the room, on the principle of a furnace.

The ventilation of the room is partially secured by openings into the attic, and hence into the open air.



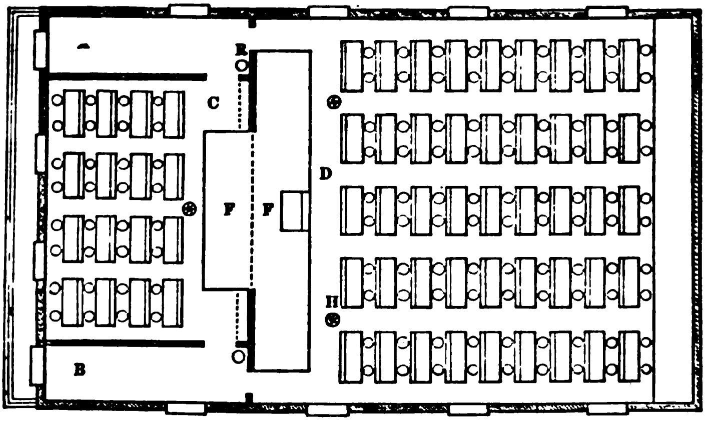
PLAN OF DISTRICT SCHOOL-HOUSE IN GREENLAND, N. H.

The building is 50 feet long by 30 feet wide, and 12 feet high in the clear. It is built of brick. A large entry (E), is partitioned off from the school-room, and fitted up not only to receive the hats, bonnets, &c., of the pupils, but to accommodate all the pupils in rainy weather during recess, as well as those who reside at a distance, when they arrive at the school-house before the school-room is opened, and those who may be obliged to stay during recess. The entry and the school-room is heated by a large stove (S) placed in the partition. The teacher's platform (P) is placed at the end of the school-room, and is raised one step above the floor. Back of the teacher, along the wall, are cases (B) for apparatus, and a well-selected library of 200 vols. There are 48 separate desks of different heights, framed on posts permanently fixed to the timbers of the floor, and fitted with seats of corresponding heights set in cast iron frames secured to the floor; both seats and desks are stained and varnished.



PLAN OF SCHOOL-HOUSE AT WASHINGTON VILLAGE IN COVENTRY, R. I.

The following cut presents the ground plan of the new school-house in the village of Washington, in the town of Coventry, R. I. The location is on the high ground in the rear of the village, and commands an extensive prospect in every direction. The site and yard, occupying one acre, was given to the district by Governor Whipple. The whole structure, without and within, is an ornament to the village, and ranks among the best school-houses in Rhode Island.



A—Boy's entrance.
B—Girl's entrance.
C—Primary school-room.
D—Secondary, or Grammar Department.
E—Teacher's platform.
F—Desks for two, with iron end-piece.
G—Chairs supported on iron pedestal.
H—Register for hot air.
R—Flue for ventilation, within which is carried up the smoke-pipe.

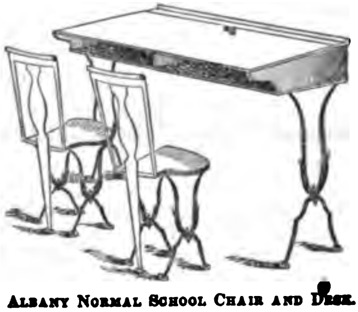
The two school-rooms can be thrown into one, for any general exercise of the two schools, by sliding doors.

The two rooms are uniformly heated by a furnace in the basement.

There is a well, sink, basin, mats, scrapers, bell, and all the necessary fixtures and appendages of a school-house of the first class.

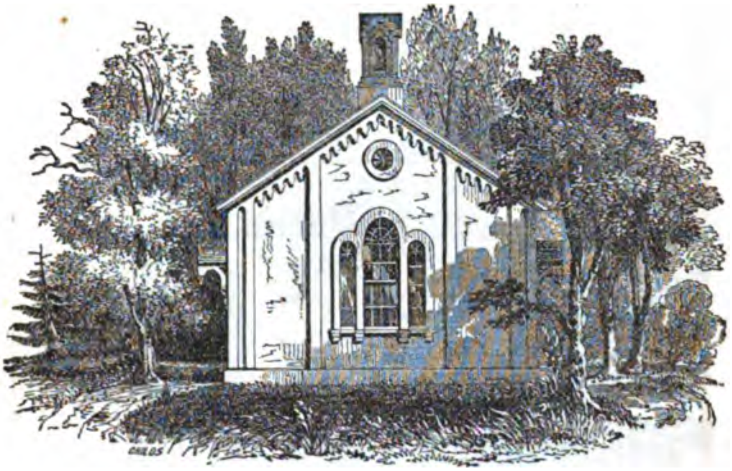
The cost of the building and furniture was $2,300.

The district possesses a library of upwards of four hundred volumes, the cost of which was raised by subscription in the District.

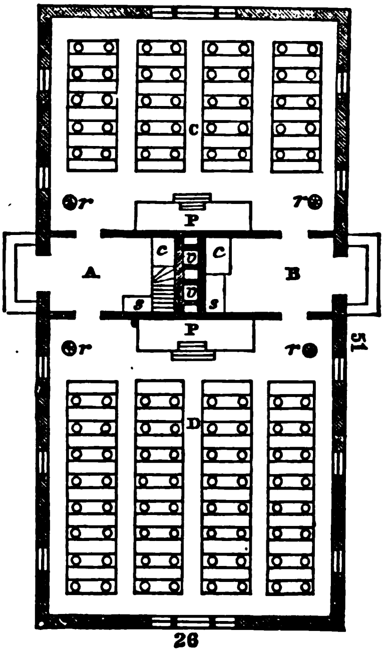


ALBANY NORMAL SCHOOL CHAIR AND DESK.

PLAN AND DESCRIPTION OF DISTRICT SCHOOL-HOUSE IN CENTREMILL, NORTH PROVIDENCE, R. I.



This house was erected after designs by Mr. Teft, of Providence. It stands back from the highway, on an elevated site, in the midst of a grove, and for beauty of design and convenience of arrangement, is not surpassed by any similar structure in New England. It is 26 feet by 51, and 13 feet high in the clear, with two departments on the same floor.

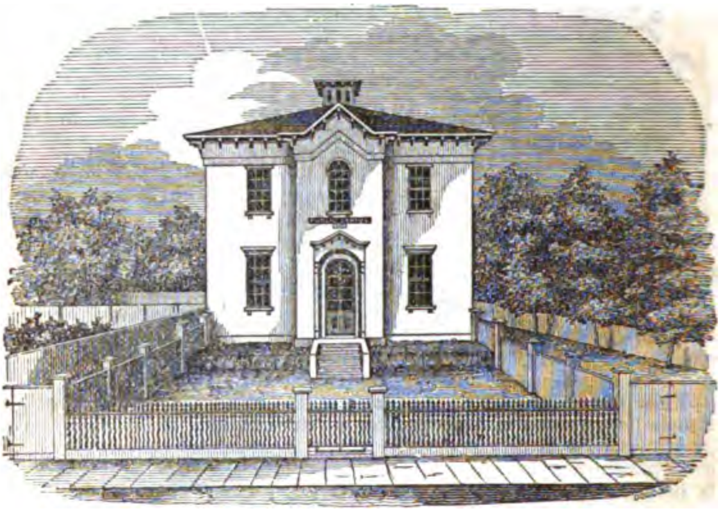


A, Boys' entry, 6 feet by 10.
B, Girls' ditto.
C, Primary department, 20 feet by 25, with desks and seats attached for 70 pupils.
D, Secondary, or Grammar department, 25 feet by 25, with desks and chairs for 64 pupils; *see p.* 120.
r, Register for hot air.
v, *v*, Flues for ventilation.
c, Closets for dinner pails of those who come from a distance.
s, Sink.

The smoke pipe is carried up between the ventilating flues, and the top of the chimney is finished so as to accommodate the bell.

Public School-House in Warren, R. I.

Fig. 1.



The above cut exhibits a front view of the Public School-house erected in the village of Warren, at the expense of the town, in 1847–48, after drawings made by Mr. Teft, of Providence, under the directions of a committee of the town, who consulted with the Commissioner of Public Schools, and visited Providence, Boston, Salem, Newburyport and other places, in order to ascertain the latest improvements in school architecture, before deciding on the details of the plan.

The lot is 225 deep and 100 feet wide for a depth of 125 feet, and 161 feet wide for the remaining 64 feet. It is divided into three yards, as exhibited in the ground plan, (Fig. 2,) each substantially inclosed, and planted with trees and shrubbery.

The dimensions of the building are 62 feet by 44 on the ground. It is built of brick in the most workmanlike manner.

Most of the details of construction, and of the arrangement in the interior, are similar to those described on page 214.

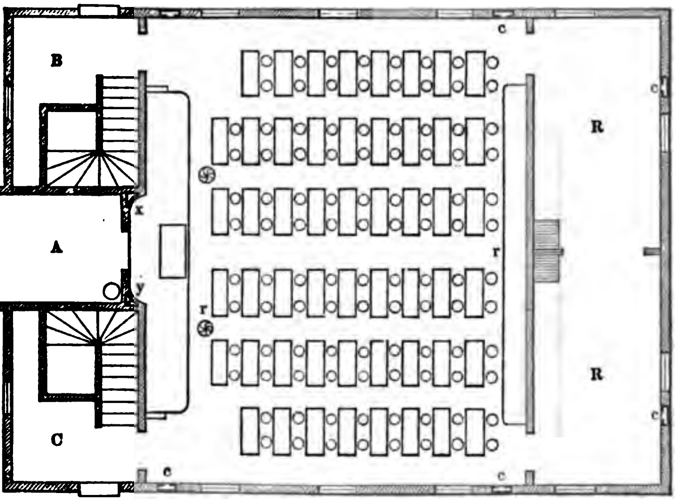
Each room is ventilated by openings controlled by registers, both at the floor and the ceiling, into four flues carried up in the wall, and by a large flue constructed of thoroughly seasoned boards, smooth on the inside, in the partition wall, (Fig. 3, x.)

The whole building is uniformly warmed by two of Culver's furnaces placed in the cellar.

Every means of cleanliness are provided, such as scrapers, mats, sink with pump, wash basin, towels, hooks for outer garments, umbrella stands, &c.

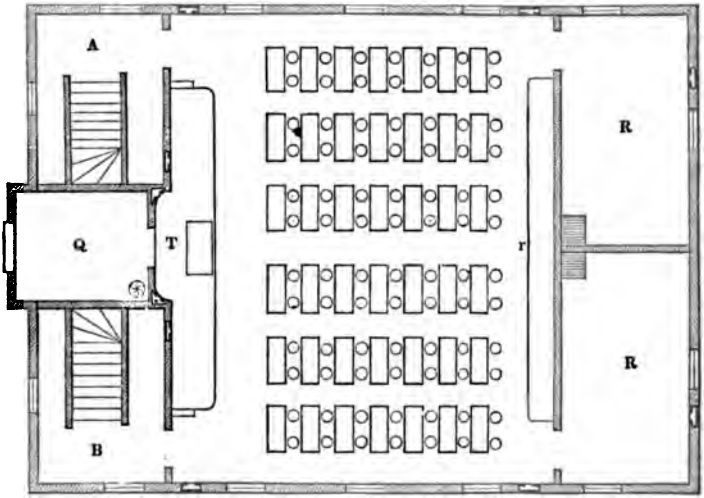
The tops of the desks are covered with cloth, and the aisles are to be cheaply carpeted, so as to diminish, if not entirely prevent, the noise which the moving of slates and books, and the passing to and fro, occasion in a school-room.

Fig. 3.—First Floor.



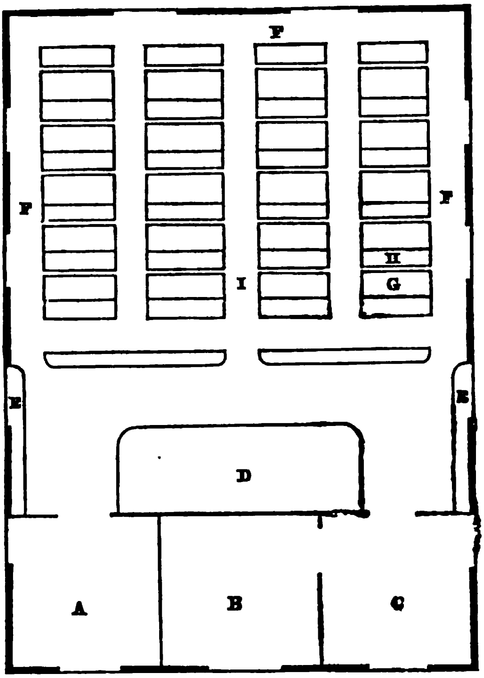
A—Front entrance.
B—Girls' entrance, with mats, scrapers, hooks for clothes, a sink, pump, basin, &c.
C—Boys' entrance do.
R—Recitation rooms, connected by sliding doors.
R, P—Platform for recitation, with a blackboard in the rear.
T—Teacher's platform.
S—Seats and desks; see page 205.
Q—Library and apparatus.
w—Windows, with inside Venetian blinds.
c—Flues for ventilation in the outer wall.
x—Flue for ventilation, lined with smooth, well seasoned boards.
y—Bell-rope, accessible to the teacher by an opening in the wall.
r—Hot air registers.

Fig. 4.—Second Floor.



PLAN OF DISTRICT SCHOOL-ROOM, RECOMMENDED BY DR. A. D LORD, COLUMBUS, OHIO.

The following plan and description are copied from the Ohio School Journal, Vol. II., edited by Dr. Lord, Superintendent of the Common Schools of Columbus, Ohio.



The building here presented should be 26 by 36 feet on the ground, or, at least, 25 by 35 feet inside. The plan is drawn on a scale of ten feet to the inch.

A C—Entries 8 feet square, one for each sex.

B—Library and apparatus room, 8 by 9 feet, which may be used for a recitation room for small sized classes.

D—Teacher's platform, behind which, on the wall, should be a blackboard 12 feet long by 5 feet wide.

E E E E- Recitation seats, those on the sides placed against the wall, those in front of the platform having backs and being movable.

F F F—Free space, at least two feet wide, next the wall on three sides of the room.

G—Desk, for two pupils, four feet long by 18 inches wide.

H—Seat, " " do " " 13 " "

I—Centre aisle two feet wide; the aisles on either side of this should be from 18 to 24 inches wide.

The area on either side and in front of the Teacher's platform, is intended for reading and spelling classes, and any other class exercises in which the pupils stand; and the space next the wall may be used to arrange the greater part of the school as one class in any general exercises requiring it.

Four windows are represented on each side of the house, and two on the end opposite the Teacher's stand. The door to the Library-room opens from one of the entries, and the room is lighted by a large window in the front end of the house.

PLANS FOR RURAL TOWNS AND VILLAGES, RECOMMENDED BY THE MASSACHUSETTS BOARD OF EDUCATION.

The following Plans were prepared by Mr. Leach, one of the agents employed by the Board of Education in Massachusetts to co-operate with their Secretary in visiting schools in different towns, and in conferring with school officers and teachers in regard to the construction and condition of school-houses, the teaching and governing of the schools, and the action of the towns in relation to them.

MODE OF VENTILATION.

By your particular direction, I have given considerable attention to the subject of ventilation. In all my examination, I have found but few houses well ventilated. In a large majority of cases, there are no means of ventilating but by opening the windows and doors. And where attempts have been made, it has been but imperfectly accomplished. The ventilating tubes have almost invariably been too small. As the result of my investigations, I would make the following suggestions. To ventilate a room properly containing fifty persons, the ventilating tube should not be less than fifteen square inches inside. The tube should be made of very thin boards, well seasoned, with a smooth inside surface, and it should be perfectly tight. It should be wholly within the room, and opposite to the register or stove. There should be an opening at the top and bottom. The ventilating tubes should be connected in the attic, and conducted through the roof, and furnished with a suitable cap. Another method, which is far preferable, is as follows: The smoke pipes may be conducted into a cast iron pipe resting on soap-stone in the attic floor, instead of a chimney built from the bottom of the cellar. This cast iron pipe may be surrounded by a brick chimney into which the ventilating tubes should lead. The space in the chimney should be equal to the spaces in the tubes, after making suitable allowance for the pipe, and the increase of friction. By this arrangement, the air in the tubes will be rarefied, and a rapid current of air produced. All attempts to ventilate rooms with tubes in the wall, or of less size than fourteen or fifteen square inches for fifty persons, have, so far as I have examined, failed. No artificial means will secure good ventilation when the temperature of the room and that of the outer air are nearly the same, without the application of heat to the air in the tubes. Unless the air is heated before being admitted into the room, it should be let in at the top, and not at the bottom, and always through a large number of small apertures. The quantity of pure air admitted must always be equal to that which is to be forced out.

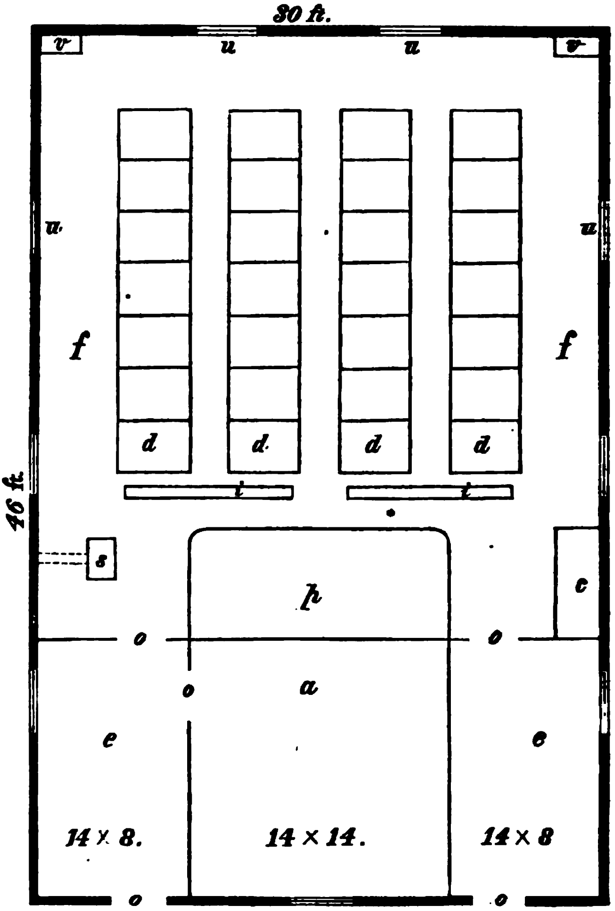
The expense of introducing a proper ventilating apparatus into houses already built in the country towns, will vary from twenty-five to a hundred dollars, according to the size and character of the house.

DIRECTIONS FOR MAKING BLACKBOARDS.

To 100 pounds of common mortar, add 25 pounds of calcined plaster; to this add twelve papers, of the largest size, of lampblack. This is to be put on as a skim coat, one sixth of an inch thick to rough plastering, and should be made as smooth as possible by hard rubbing. It may also be put on to old plastering, after it has been thoroughly raked and prepared. This should be covered with a coat of paint, made in the following manner: To one quart of spirits, add one gill of boiled oil. To this add one of the largest papers of lampblack, after it has been thoroughly mixed with spirits. To this add one pound of the finest flour of emery. This paint may also be put on boards or canvas. This should be constantly stirred, when used, to prevent the emery from settling. If too much oil, or if any varnish be used, the board will become more or less glazed and unfit for use. Some prefer to have the board behind the teacher green or bronze, which is more grateful to the eye. This can be done by using chrome green instead of lampblack. None but the very finest flour of emery should be used. Some prefer pulverized pumice-stone to emery.

NOTE.—All the Plans are drawn on a scale of ten feet to an inch, with the exception of Numbers 9 and 10, which are drawn on a scale of twelve feet to an inch.

PLAN NO. 1, FOR RURAL OR VILLAGE SCHOOL-HOUSE.



This plan represents the ground floor of a school-house one story high, 46 by 30 feet on the inside.

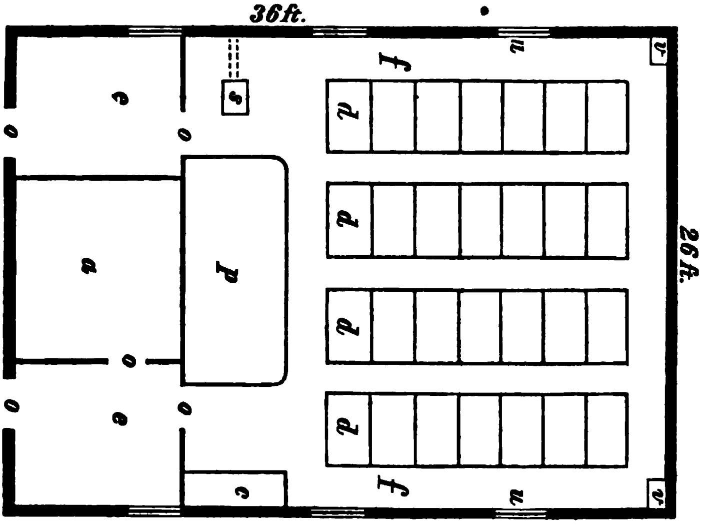
e, *e*—Entries, one for each sex, 14 by 8 feet. *a*—Anteroom, 14 by 14 feet. This may be used as an assembly-room for the pupils before school and at noon, or for a recitation-room and library. Where it is practicable, there should be separate rooms for the pupils to assemble in. This can usually be provided in the basement at a small expense. *p*—Teacher's platform, 14 feet long and 6 feet wide, and 7 or eight inches high. Behind the teacher's desk there should always be a blackboard the whole length of the platform, from 4 to 5 feet wide, the lower edge of which should be 3½ feet from the top of the platform. *f*, *f*—Aisles. The inner aisles should be from 16 to 18 inches wide. The outer aisles from 36 to 48 inches. *d*, *d*, *d*, *d*—Seats for two pupils each. The desks should be from 40 to 48 inches long; and the desks and seats should be from 30 to 36 inches wide, and adapted in height, to the age of the pupils. *c*—Closet for maps, books of reference, &c. *s*—Stove. The dotted lines an air-box, 10 inches square, to admit pure air. *v*, *v*—Ventilating tubes, 12 by 10 inches each. They should be placed within the room, and made of thin boards, perfectly tight, and smooth on the in-
hey should be united in the attic, and lead through the roof.

i, *i*—Settees for recitations. *o*, *o*, *o*, *o*—Doors. *u*, *u*, *u*—Windows.

Blackboards should be placed entirely around the room except in the narrow spaces between the windows. They should be from 4 to 5 feet wide for large scholars, and 3 or 3½ for small ones. The lower edge should be from 2½ to 3 feet from the floor. Every school-house designed for both sexes should have two entrances, one for each sex. There should also be two separate backyards, inclosed with a high tight fence. The entrance to the water-closets should be through the basement, or through doors on the outside which should be kept locked. This is a very important arrangement, and has too generally been overlooked. The best interest of a school can not be secured without it. It is desirable that there should be a basement under every school-house. The bottom may be covered with a floor, with brick, or with hydraulic cement. The basement should be divided into two parts, one for each sex. There should be a well in the center, and a pump and sink in each part. A part of it can conveniently be used for storing fuel, &c. The best mode of heating a school-room is by coal or wood furnaces in the basement. When stoves are used, the pipe may be conducted through the floors, well protected by soap-stone, into a chimney in the attic. In this way valuable room may be saved, which would otherwise be occupied by the chimney. It is also desirable that the teacher's desk be placed at the end of the building at which the pupils enter.

Single desks are generally to be preferred to double ones. The whole expense for room and desks is about twenty per cent. more. When practicable, the house should be so placed, that pupils as they sit, may face the north. In rooms to be used in summer as well as winter, it would be better that there should be no windows* on the south. In all cases there should be outside or inside blinds. Outside blinds are to be preferred to keep a room cool. Inside blinds can be more easily managed to modify the light. The gable end should also be toward the south, since by this arrangement the roofs would be much less heated in summer. On the ceiling of every school-room the four points of the compass should be painted in distinct colors, with letters designating the several points.

PLAN No. 2.



This plan is essentially the same as the preceding one, excepting in size. It is 36 by 26 feet inside. This can be adopted when it is desirable to sacrifice convenience for economy. It will be perceived that the outer aisles are much narrower than those in the Plan Number One. Wide aisles are much more convenient for scholars to stand in during recitations, and to work at the blackboard without being annoyed by others passing them. It is also important that the aisles be wide enough to accommodate settees on days of examination, &c.

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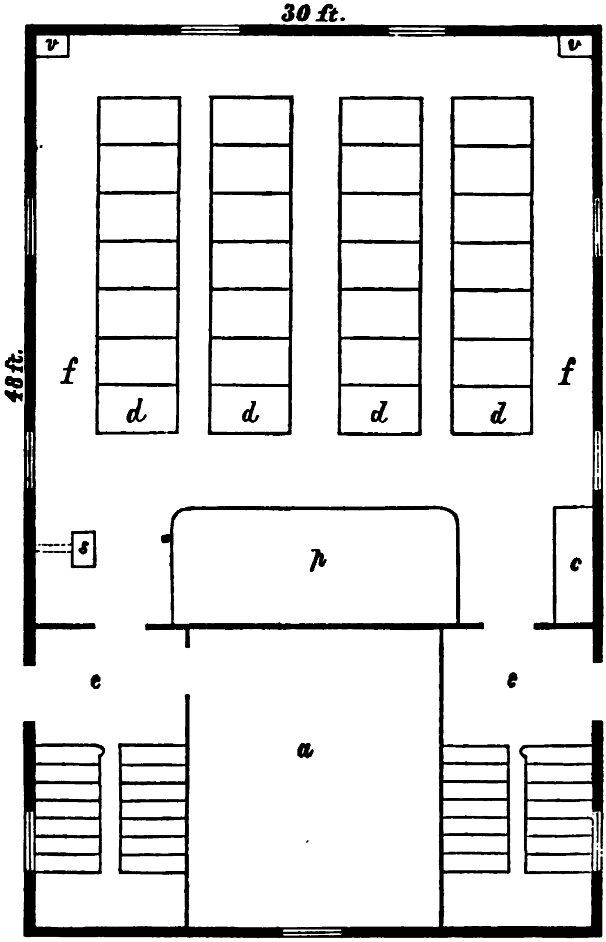
* It will be better to provide curtains and shutters to modify, rather than a blank wall to exclude altogether the cheerful sunlight.—H. B.

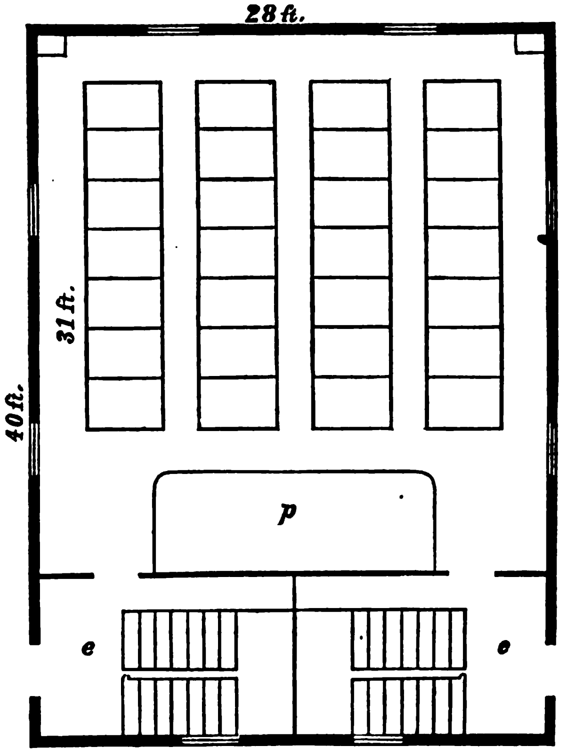
Plan No. 3.



This represents the ground floor of a building two stories high. It is 48 by 30 feet inside. The description of Plan Number One will apply to this, with the exception of the entries.

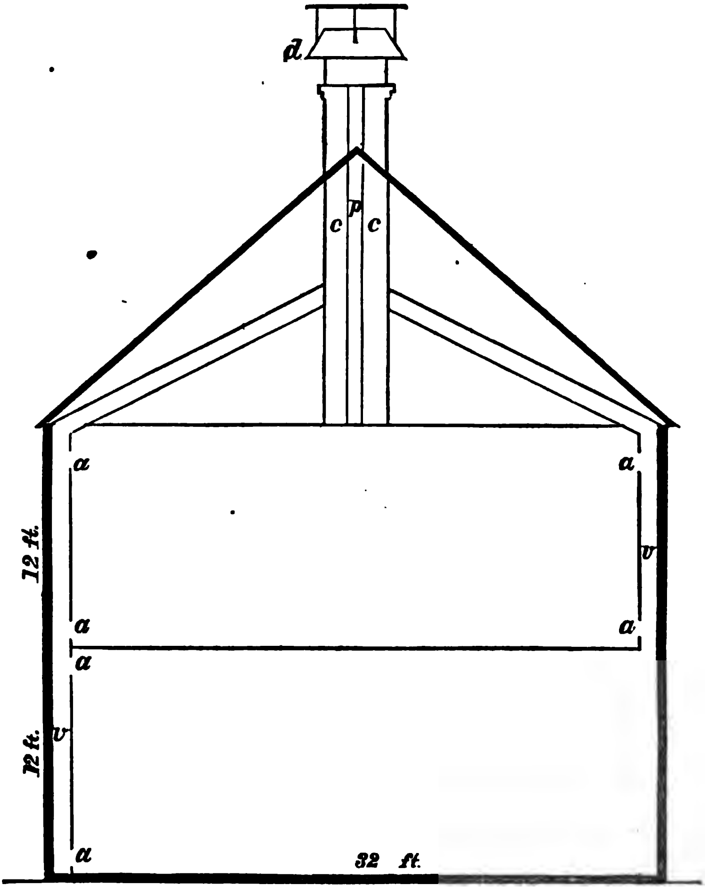
e, *e*—Entries, one for each sex, 16 by 8 feet. *a*—Anteroom. The one on the lower floor communicating with the boys' entry, the upper one communicating with the girls' entry. There never should be winding stairs in a school-house. They should be made as represented on the plan, or in some form with broad steps. The landing place should never be directly opposite the door. The rooms should be from 11 to 13 feet in height. In large schools the outside door should swing outward, to enable the pupils to rush out easily in case of an alarm.

PLAN No. 4.



This differs from Number Three chiefly in its size. Its dimensions are 40 by 28 feet inside. It has no anteroom, and the entrances are on the sides. There should always be a basement under houses constructed after this plan. This should be divided into two rooms, which should be well finished, warmed, and lighted.

PLAN OF VENTILATION.



v, *v*—Ventiducts or ventilating tubes. These should be at least 14 inche. square for a room containing 50 scholars. *a*, *a*—Apertures into the ventiducts *p*—Cast iron smoke flue, resting on soapstone in the attic floor. *c*, *c*—Chimney surrounding the smoke flue. This should contain as many square inches as the ventiducts leading into it, after deducting the space occupied by the flue. The inside of the chimney should be circular, and plastered perfectly smooth. This mode of ventilating is applicable to any method of heating, either by stoves or by furnaces. The heat of the smoke flue will rarefy the air in the chimney, and produce a strong draught in the ventiducts. This is regarded as the most effective, and, at the same time, the most economical mode of ventilation. The lower aperture should always be kept open. The upper aperture should be closed, excepting near the close of the morning and afternoon session, when it should be opened. It has been ascertained, by repeated experiments, that carbonic gas diffuses itself rapidly into every part of the room. In a room of 50 scholars, from 200 to 500 cubic feet of air are vitiated every minute, and unless some effectual means are devised for expelling the impure air, the most serious consequences must ensue.

IX. SECONDARY EDUCATION IN PRUSSIA.

[From Bache's Report on Education in Europe.]

The immediate authority superintending secondary instruction is the school board (schul-collegium) of the province in which the gymnasium is situated. This school board is a branch of the provincial consistory, of which the chief magistrate of the province, the higher president (ober-president,) is the head. One of the councillors of the ministry of puplic instruction, at Berlin, is specially charged with the concerns of all the gymnasia, and is the channel through which the provincial authorities communicate with the ministry. The school board consists of the president and vice president of the provincial government, and of two school councillors, and holds its meetings in the chief town of the province. They regulate the details of instruction and discipline in the gymnasia, correspond with the directors, appoint the teachers, except the director, who is appointed by the minister, make visits of inspection, and attend the examinations, especially those for passing to the university, and authorize the books to be used in the school and placed in the library. The inspection of religious instruction belongs to the ecclesiastical functionaries of the Protestant and Catholic churches severally. The royal gymnasia are supported from the funds of the state and the payments of their pupils, and their receipts and expenditures, are under the charge of a special officer, or of the director. The funds of those which are otherwise endowed, are usually under the direction of a committee, or of one of the officers. In 1850, there were 117 gymnasia with 1,664 teachers and 29,474 pupils, and more than one hundred real schools and other schools of this grade, for special instruction for particular departments of practical life.

The following abstract of a series of regulations adopted by the central board in 1837, will give a good idea of the general organization of secondary instruction.

The regulations embrace the following heads: 1. Admission of pupils. 2. Subjects of instruction. 3. Distribution of teachers and of the subjects of the lessons. 4. The number of hours of teaching. 5. Studies out of school hours. 6. Duration of the courses. 7. Remarks on the regulations for the examinations. 8. Remarks on the supposed defects of teachers, methods of instruction, &c. 9. Physical education. 10. Religious instruction. The following is an abstract of the remarks upon these subjects.

1. *Admission.* Experience has fully proved that the admission of pupils at a very early age into the gymnasia is prejudicial to the individuals themselves, as well as to the institutions. Neither the mental nor physical development, nor the attainment, at an early age, are adequate to the pursuit of the courses appropriate to a gymnasium, and hence the admission of very young pupils induces an improper lower

ing of the standard of instruction in these establishments. The ministry, therefore, recommends that pupils be not admitted at an earlier age than ten years, and that the following qualifications be required: 1. Facility in logical and rhythmical reading, both in German and Roman text, and the rudiments of grammar and orthographic writing. 2. Writing from dictation. 3. Practice in the four ground rules of arithmetic, with abstract numbers, and first principles of fractions. 4. Elements of geography, particularly that of Europe. 5. Stories of the Old Testament, and life of Christ. 6. Elementary notions of drawing and of form.

Two errors on the part of parents are pointed out by the ministry, the influence of whose advice is directed against them: The first is, that children of feeble bodily constitutions should be devoted to literary pursuits; the second, that young men who have passed the appropriate age for instruction may be advantageously pushed into one of the learned professions, even if they are required to teach in order to obtain the needful education.

2. *Subjects of instruction.* As the ground work of higher instruction, the following subjects are recommended to be pursued in the gymnasia: 1. Religious instruction. 2. German. 3. Latin. 4. Greek. 5. Mathematics. 6. Physics. 7. Natural history. 8. Geography. 9. History. 10. Writing. 11. Drawing. 12. Vocal music. Experience has shown that these subjects are particularly calculated to develop the intellectual powers, and to give a systematic and practical preparation for the higher studies. The same can not be said of the Hebrew, the study of which is specially appropriate only to theologians. A knowledge of the French is not considered essential to the true purpose of a gymnasium. This language has been made a subject of public instruction on account of its usefulness in after-life, and not of its correctness or purity. With the exception of these two languages, the subjects enumerated above have always been taught in the gymnasia, though in variable proportions. No one of them could, with propriety, be omitted, and propositions to that effect will receive no countenance. The ministry does not fear that injury will result to the mental or physical development of the pupils, by pursuing all the branches in their appropriate degree, but teachers are cautioned against attempts to push one subject at the expense of another; being reminded that the course should be viewed as a whole, which must suffer by the unequal forcing of its parts. The directors of gymnasia are especially required to attend to this point, and the school boards are requested to relieve them from teaching, as far as may be necessary to the inspection thus required.

If the subjects of instruction, as here laid down, be compared with those of the secondary schools of England, it will be found that what is there regarded as innovation, has been successfully used as the course of grammar school instruction in Germany. That the efficiency of the course is confirmed by long experience, and that the subjects are recommended, anew, as the future course of those institutions. While ancient letters are successfully cultivated, other subjects are not neglected, but their equal importance with the former is clearly asserted, and as clearly proved by results. While the Germans have lost nothing in general literary culture by this system, they have gained much in other departments of knowledge.

The scholastic year is divided into two terms, or half years, at the close of each of which there is an examination. At the end of the second half year, the examinations for passing from one class to another are held. The usual vacations are two weeks at Easter, one at Whitsuntide, three in August, one at Michaelmas, and two at Christmas.

3. *Distribution of the teachers and of the subjects of instruction.* There are, in general, six classes in a gymnasium, of which the lowest is called sixth, and the highest first. To produce a harmony in the methods and degree of instruction, notwithstanding the variety of subjects taught, it has, for some time, been the custom in the Prussian gymnasia to assign several subjects of instruction to the same teacher, in the same class. This arrangement is confirmed in the document under discussion. It is recommended that similar subjects of instruction be classed together, to constitute a department, as, for example, German and Latin; history, geography, and natural history; and mathematics, and physics. That then the instruction of one or more classes, in one department, be consigned to one teacher; as the instruction of the lower classes in German and Latin; of the two middle classes in Latin, Greek, and French; of the two higher in German, Greek, and French; of the lower and middle classes in history and geography; of the higher classes in mathematics, physics, and mental philosophy. The number of teachers would thus be, in general, in a gymnasium of six classes, two for the two lower classes, three for the two middle, and four for the two higher classes.

The ministry further recommend that kindred subjects be taught in different parts of the same term, rather than on different days of the same week, as geography at the beginning of a term, and history at the close; a Latin and Greek prose author at the beginning of a term, and a poetical author at the close of the term, &c.

With a view to induce teachers to take upon themselves the arduous duties of a department, or class teacher, as just explained, the school board are recommended to promote teachers according to merit, not confining their promotion to the institution in which they may be, but taking the entire range of the province. A promise is made by the ministry to pay strict attention to this rule, in promoting to vacant situations of directors of gymnasia. The class teachers are to have the title of "upper teachers," (ober-lehrer,) the others being designated simply as "teachers."

It is obvious that very varied attainments are thus required of the regular, or class teachers, and that the difficulty of finding persons competent to discharge these duties, increases very much as the grade of instruction becomes more elevated. Hence the practice in the gymnasia varies very materially from this recommendation. It is so desirable, in the higher classes, that the teacher should devote much time to his own improvement in the knowledge of his branch of instruction, and that he should have a strong taste for its cultivation, that in general it is found advisable to confine his attention to a single subject, or to subjects much nearer akin than those which are classed together in the enumeration just made. This is particularly the case in the mathematics, beyond the mere elements, the physics and physical geography, the natural history, the less elementary parts of drawing, and vocal music. In the case of the French language, a special teacher, from the very beginning, is absolutely necessary, if the instruction in it is to be any thing more than a matter of form.

4. *Number of hours of recitation.* This is fixed at thirty-two per week; a number which experience has shown may with propriety be exacted of students, and which is requisite to complete the course of studies. In the French colleges there are but twenty-four hours of regular obligatory instruction per week. This difference alone would go far to explain the reason for the fact, that in the gymnasia, the written course of studies is closely followed in all its departments, while in the royal colleges it is but partially carried out. That in the former, all branches

are deemed worthy of attention, while in the latter, in practice, some are treated as if they were not appropriate parts of a regular course of studies. The Prussian minister asserts, very justly, that four hours every morning, and two hours in the afternoon, four times a week, may be passed in a well ventilated school room, without injury to health. The condition in regard to ventilation is, however, essential to the truth of the proposition; it is easily realized in the gymnasia, on account of the small number constituting each class. I found, in fact, generally, but little objection to the arrangements, in this respect, in these institutions.

I had reason to remark, in the city gymnasia of Prussia, in general, that the appearance of the upper classes betoken a higher state of health than that of the lower, which would not have been the case had they been over worked. The mental labor, on the part of the student, indicated by thirty-two hours per week spent in school, is less than it would be from the same time in an English grammar school, or in one of our own establishments of the same grade, from the mode of teaching. Much of the instruction is communicated by conversation and by lecture, during the school hours, which are thus devoted to acquiring knowledge as well as to reciting what has been learned by study at other times. The school boards are requested not to allow this time of thirty-two hours per week to be exceeded, and a general plan for the distribution of time, which will be given below, is appended to the instructions. This plan, however, may be modified according to the circumstances of the institution to which it is to be adapted, preserving, however, the number of hours devoted to religious instruction, to the languages and mathematics, as cardinal points in the system. It is deemed unnecessary to begin the French earlier than in the third class, which would postpone it as late as thirteen years of age. Natural history may be substituted for physics in the second class, and a general

PLAN OF STUDIES ARRANGED FOR THE GYMNASIA OF PRUSSIA BY THE MINISTRY OF PUBLIC INSTRUCTION, OCTOBER 24TH, 1837.

SUBJECTS OF STUDY, &c.	NUMBER OF HOURS PER WEEK.						
	Prima, or highest class.	Secunda.	Tertia.	Quarta.	Quinta.	Sexta.	Total.
Latin,	8	10	10	10	10	10	58
Greek,	6	6	6	6			24
German,	2	2	2	2	4	4	16
French,	2	2	2				6
Religious Instruction,	2	2	2	2	2	2	12
Mathematics,	4	4	3	3			14
Arithmetic and Elements of Form,					4	4	8
Physics,	2	1					3
Philosophy,	2						2
History and Geography,	2	3	3	2	3	3	16
Natural History,			2	2	2	2	8
Drawing,				2	2	2	6
Writing,				1	3	3	7
Vocal Music,			2	2	2	2	8
	30	30	32	32	32	32	
Hebrew for the future Theologians,	2	2					

review of that branch, as studied in the previous years, is recommended, Drawing and vocal music are intended to be carried so far as that the pupil may follow them to advantage if his tastes incline that way.

The ministry recommends that where several hours per week are devoted to a subject, more than one each day should be given to it, so as to concentrate the attention upon a few branches every day.

5. *Study out of school hours.* On this subject the ministry remarks, that while it is highly important that the pupil should have preparation to make, requiring the exercise of his own resources, it is not less so that the amount of private study should not be carried to an injurious extent. The regulations, therefore, provide that at the beginning of each term there shall be a conference of the teachers, to determine the due amount of such work in the different classes, in detail. Every teacher should keep a book, in which the exercises actually given are accurately noted, so that the director may see at any time how far the decisions of the conference have been conformed to. The written exercises of the pupils must be regularly corrected by the teachers, and at least once a month they must review the exercise books, to ascertain the progress and the propriety of the exercises. German and Latin compositions are to be especially attended to. Themes on subjects with which the pupils are not acquainted, so that they must labor both for the matter and language, are forbidden. The teacher should not only select subjects known to the pupils for these exercises, but should also explain the manner in which he expects them to be treated.

6. *Duration of the courses.* The six classes should, according to rule, be passed through in nine years: the three lower, each, in one year, and the three higher, each, in two years; thus a pupil entering at ten would leave the gymnasium at nineteen. The provincial school board may determine the period of the year for the examinations for passing from class to class. In the gymnasia, where the classes are subdivided on account of numbers, and the pupils pass from one section to another at the end of six months, the arrangement is permitted to be continued.

Superior excellence in a few departments is not to warrant the promotion of the pupil to a higher class; he must be reasonably proficient in all.

7. *Examination for the university.* The regulations of 1834, on this subject, are confirmed by the present; certain erroneous constructions, which have been put upon the former, being pointed out. The first of these is, the supposition that the amount which the pupils are able to go over, during the time fixed for examination, determines the character of their certificate of capacity, while, on the contrary, this is given for the general knowledge of the subjects which they show. The fact that this examination requires a previous attendance of two years in the first class, is considered as indicating positively that the course of that class can not be intended to drill for the examination. The next refers to the specific direction in regard to the extent of examination on the different subjects, which being intended as a general guide to the examiners, has been misconstrued so far as to be supposed to furnish teachers who are preparing pupils the means of imparting the least amount of knowledge consistent with their passing. The ministry considers that the qualifications for the final examination have stood the test of experience, having been found not too high, and calculated to promote sound instruction and not hasty preparation. As, however, the excitement of these examinations appears to act injuriously on certain temperaments, the ministry authorizes the examining commissions to reduce the viva voce parts of the examination, in cases where they see cause to do so. The

ministry declines omitting the examination on the course of religious instruction.

8. *Supposed defects of teachers, &c.* The ministry states, as the remark of many intelligent persons, that while so much progress has been made within the last twenty years in the elementary schools, many of the teachers of the gymnasia, neglecting the progress of the science of teaching, still follow the old routine methods; that the teachers overrate the importance of their special branches, and thus destroy the harmony of the system; that they imitate the style of lecturing of the university professors, which renders their explanations ill adapted to the age and state of progress of their pupils, and when, in consequence, their pupils get on slowly, instead of seeing in this fact the necessity for a change of method, they charge the fault upon the classes. The ministry remarks that it has not the means of judging personally whether such criticisms are well founded or not, but that the provincial school boards, to whom they have been submitted, are of opinion that, in general, they are too severe. They are made public, however, that the teachers of the gymnasia may reflect upon them.

No specific method of instruction, it is remarked, applicable to all varieties of age, preparation, and subjects of study, can be pointed out. Every teacher should observe, closely, the results of his instruction, and adopt freely the advice or example of teachers of known ability in their art. The directors of gymnasia are especially enjoined to visit the classes of their teachers frequently, and to make such suggestions as may seem to be required; they are further expected to set an example themselves of thorough teaching. The ministry considers that the system of class teachers, already described, facilitates the course of observation recommended, by giving the teacher a thorough acquaintance with all the members of his class. The importance of making the science of teaching one of observation is thus directly inculcated.

The probation of a year, required by the decree of September 26th, 1836, before the admission of a teacher to full standing, being intended to prevent the admission of incompetent teachers, the provincial school boards are enjoined to give effect to the provision, by promoting to the situations of ordinary or class teachers (ordinarii,) those only who have shown decided capability in their art. The ministry promises to give such an extension to the normal schools for teachers of gymnasia, as shall insure an adequate supply from them.

The provincial boards are enjoined to see that suitable books are provided for the gymnasia, and to attend to regulating the details of the programmes of the different classes. This authority obviously leaves the most essential points of instruction within their power.

9. *Physical education.* On this subject, the document from the ministry states that representations have been made from many of the directors and teachers of gymnasia, that physical education should be introduced as an essential part of their systems. The necessity for due physical development is admitted; but it is argued, that in the gymnasia which receive day scholars alone, an attention to it forms no part of the duty of the teacher, who is merely bound to furnish the requisite time for recreation, and to take care that the health of the pupils is not injured during the hours of recitation by causes depending upon the school. In the boarding gymnasia the case is admitted to be different. A continuance of gymnastic exercises in these establishments, when they have been tried and found beneficial, is allowed, but the compulsory attendance of day scholars upon them is not permitted. When regular gymnastic exercises are introduced, it is made the duty of the

school board to see that a proper teacher is provided, and the exercises must be conducted under charge of the director of the institution.

I confess, that the idea of leaving the physical education of children entirely to their parents, especially in the cities and towns where the day gymnasia are usually established, seems to me very unwise; particularly so in Prussia, where all else is regulated, and where the youth are always glad to engage in gymnastic exercises, when the means are furnished to them.

10. *Religious education.* It is enjoined that this contain the whole doctrine of Christian faith, and that the instruction be given according to a regular plan.

The provincial authorities are charged with the communication of the foregoing regulations to the directors and teachers of the gymnasia, and with the superintendence of their execution.

Each instructor manages his class in his own way, subject to the advice of the director, and hence, of course, there is considerable variety. Harsh punishments, and personal violence, are discountenanced in all the classes. Appeals to the moral sentiments and feelings, and admonitions, are the favorite methods of discipline. I nowhere saw the discipline in better condition than in these schools, the youth of the upper class, especially, going through their duties without the necessity for more than occasional admonition, and exhibiting the decorum of gentlemen in whatever situation I met them. The director is the supreme resort when a teacher fails in being able to produce proper conduct on the part of a pupil, and he may dismiss from the institution. This, however, is rarely necessary.

The means of securing attention to study do not differ from those in other countries, and already often alluded to. The system of excitement is carried to a far less extent, in general, than in the French colleges. Emulation is encouraged, but not stimulated into ambition. In the lower classes, the pupils change places during the daily recitations; afterward, they are arranged by monthly trials of composition, and at the examinations; and in the higher classes, from the same compositions, and from the results of their marks for daily recitation, and at the half yearly examinations. Prizes are not given as a general rule, though there are some special ones in certain gymnasia.

This outline of the system of the gymnasia, as regulated by the central authority, requires, to complete it, some account of the regulations for the final examination prior to passing to the university (abiturientenprüfung,) and of the means of providing teachers. The regulations for the final examination occupy fifty sections, and enter into very minute details; it will be sufficient for the present purpose to present an abstract of the more important of them under the following heads: 1. The persons to be examined, the object, place, and time of the examination. 2. The authorities by whom, and under whose direction, the examination is to be conducted. 3. The character and subjects of the examination. 4. The kind of certificate obtained on passing the examination satisfactorily, and the privileges attached to it.

1. *The persons to be examined, &c.* Those who intend to embrace one of the professions requiring a course of three or four years at a university, must, before matriculating at the university, pass the ordeal of this examination; the object being to ascertain whether the candidate has made himself duly master of the subjects required for successful entrance upon his university career. The examination must be made in a regular gymnasium, and in some part of the last two months of the scholastic year.

To be admitted to the examination, a pupil of a gymnasium must have been in its first class at least three terms of half a year each, except in cases where pupils have especially distinguished themselves during a year in this class. Three months' notice of their intention to stand this examination is to be given by the pupils to the director of the gymnasium, who advises with them on their intention, but has no right to prevent any pupil of three terms' standing in the first class from coming forward.

Persons who are educated in private undergo this same examination in any gymnasium which their parents may select. They are required to present beforehand the certificate of their masters as to moral conduct and proficiency, and are examined at a different time from the regular students.

2. *By whom the examination is conducted.* There is a committee for each gymnasium, consisting of the director, the masters who have charge of the higher classes, a member of the ecclesiastical authority of the place, and a member of the provincial consistory. This latter member presides, and his appointment must be approved by the ministry of public instruction. The ecclesiastical member must be approved by the provincial consistory. Besides these, there is a royal commission appointed by the ministry, and consisting of professors of the university and others, who are present as inspectors at the examination. The teachers of the gymnasium and the local authorities of the school are also present at the oral examinations.

3. *Character and subjects of examination.* The examinations are of two kinds, written and oral. The subjects are, the German, Latin, Greek, and French languages,* for students in general, and in addition, the Hebrew for those who intend to study theology. Religion, history, and geography, mathematics, physics, natural history, and the elements of mental philosophy. The subjects of the written examination are chosen by the royal commissary present, from a list furnished by the director of the gymnasium. These subjects must be such as have never been treated specially in the class-room, but not yet beyond the sphere of instruction of the pupils. All the candidates receive the same subjects for composition, which are given out at the beginning of the examination. The candidates are assembled in one of the halls of the gymnasium, and remain there during the period allotted for their exercises under the charge of one or other of the examining teachers, who relieve each other. The only books allowed them are dictionaries and mathematical tables. The written exercises consist, first, in a German prose composition, the object of which is to discern the degree of intellectual development, and the style of composition of the candidate. Second: of a Latin extempore† and a Latin composition on some subject which has been treated in the course, the special reference in this exercise being to the correctness of the style. Third: a translation from a Greek author, which has not been read in the course, and from Latin into Greek. Fourth: a translation from the German into the French. Fifth: the solution of two questions in geometry, and of two in analysis, taken from the courses in those subjects. Candidates who desire it, may be examined further than is required for passing.

Those who intend to study theology or philology, translate a portion of one of the historical books of the Old Testament, or a psalm, into Latin, adding a grammatical analysis. The time allowed for the several written exercises is as follows: For the German, five hours; Latin composition, five hours; Latin extempore, one hour; Greek translation, three hours; translation from Latin into Greek, two hours; French composition, four hours; mathematical exercises, five hours; Hebrew exercises, when required, two hours. Four days are allowed for the examination in these subjects, and they must not immediately follow each other. The viva voce examination is conducted by the masters who have given instruction in the first class on the subjects of examination, unless the royal commissary directs otherwise. The subjects are, first, the general grammar and prosody of the German language, the chief epochs of national history and literature, and the national classics. Second: the translation and analysis of extracts from Cicero, Sallust, Livy, Virgil, and Horace; the ability of the candidates to render the author with judgment and taste being put to the test, as well as their grammatical and archeological acquirements; parts of the examination are conducted in the Latin language. Third: the translation and analysis of Greek prose and of portions of Homer, with questions upon Greek grammar, Grecian history, arts, and mythology. Fourth: translations from the French classics, during which an opportunity is given to the pupil to show how far he can speak the language. Fifth: questions upon the Christian doctrines, dogmas and morals, the principal epochs in the history of the Christian church, and the Bible. Sixth: arithmetic, the elements of algebra and geometry, the binomial theorem, simple and quadratic equations, logarithms and plane trigonometry. Seventh: in history and geography, on ancient history, especially that of Greece and Rome, and modern history, especially that of the conntry, on physical, mathematical, and political geography. Eighth: in natural history, on the general classification of its subjects. Ninth: in such portions of physics as can be treated by elementrry mathematics, and on the laws of heat, light, magnetism, and electricity. Tenth: on the elements of moral philosophy, psychology, and logic. The future theological student must, besides, translate and analyze a portion of one of the historical books of the Old Testament.

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* In the grand duchy of Posen, the Polish language is also one of the subjects.

† An exercise in which the master speaks in German to the pupil, who must render the German into Latin, in writing.

4. *The kind of certificate obtained, and the privileges attached to it.* When the examination is closed, the board already alluded to as conducting and superintending it, deliberates upon the notes which have been taken during its course, each member having a vote. Those students who are deemed to have passed a satisfactory examination, receive a certificate called a "certificate of maturity," (maturitäts-zeugniss,) the others are remanded to their class, and may present themselves, after an interval of six months, for another examination, unless they are deemed entirely incompetent to continue a literary career. Proficiency in all the subjects of examination is, in general, required to entitle a candidate to a certificate, but exception is sometimes made in favor of those who show great attainments in the languages or mathematics; and in the case of students of a somewhat advanced age, the direct bearing of the different subjects upon the profession which they intend to embrace is considered. The daily records of the class-rooms are presented by the director of the gymnasium to the examiners, as showing the character of the candidates in regard to progress and conduct, these points being specially noted in the certificate. The certificate of maturity contains, besides, the name and address of the pupil, and of his parent or guardian; the time during which he has been at the gymnasium, and in its first class; the conduct of the pupil toward his fellows and masters, and his moral deportment in general; his character for industry, and his acquirements, as shown at the examination, specifying the result in each branch, and adding a statement from the masters of drawing and music of his proficiency in their respective departments; the studies which he proposes to prosecute at the university,

and to commence which he leaves the gymnasium. These certificates are delivered in an assemblage of the students of the gymnasium with suitable remarks. The certificate of maturity is necessary to enable a youth to be matriculated in either of the faculties of theology, law, medicine, and philology, in one of the national universities, to be admitted to examination for an academic degree, to be appointed to office in state or church, or to obtain one of the royal bursaries at the universities. Special exception in regard to matriculation may be made by authority of the minister of public instruction. Students who have not passed a satisfactory examination, and whose parents demand it, are entitled to a certificate, stating the branches in which they are deficient; they may enter the university with this, and are registered accordingly. This registry enables them, if they subsequently obtain a certificate of maturity, and the special permission of the minister of public instruction, to have their matriculation dated from the time of inscription. Pupils who have passed through the third class of a gymnasium are entitled to claim one year of voluntary military service, provided they report themselves at a specified time during their twentieth year.

There are two kinds of schools devoted to the preparation of teachers for the gymnasia, called respectively philological and pedagogical seminaries, (philologische seminare, pädagogische seminare.) One of the first kind is attached to the universities of Berlin, Bonn, Breslaw, Halle, Königsberg, and Greifswalde, and one of the second is placed at Berlin, Stettin, Breslaw, Halle, Königsberg, and Münster. Besides these, there is a seminary for teachers of natural philosophy and the natural sciences, at Bonn.

X. THE QUEEN'S COLLEGES AND UNIVERSITY

IN

IRELAND.

The national school system in which secular instruction is kept free from whatever could offend the most susceptible sectarianism, had proved so successful in diffusing a sound elementary education among the children of the peasantry and the working classes of Ireland, that in 1845 the plan was extended so as to provide, under government endowment, the means of obtaining a liberal and professional education for the sons of the middle and upper classes—available to persons of every denomination. This was done by the establishment of the Queen's Colleges at Belfast, Cork, and Galway—now combined and incorporated into the Queen's University, the Senate or governing body of which is seated or holds its meetings at Dublin.

The entire system of United Education has been built up by the co-operation of the two great parties in the State; upon this high ground their only rivalry has been which should contribute most to the common work, and carry out most efficiently its great principle. To the Whig government of Lord Grey, belongs the honor of having first had the courage to proclaim and put in action that principle by the appointment of the first board of commissioners in 1831; the charter which established the schools upon a permanent basis, by constituting the commissioners a body corporate, was a measure of the Tory government of Sir Robert Peel, in 1844; on the other hand, the completion and crowning of the edifice by the addition of the colleges was the idea and enactment of Sir Robert Peel, and has been the achievement, for the greater part, of Lord John Russell. At the opening of the session of parliament on the 4th of February, 1845, her Majesty, in the speech from the throne, recommended to the consideration of the legislature "the policy of improving and extending the opportunities for academical education in Ireland;" and on the 19th of March thereafter, Sir Robert Peel, in reply to a question by Sir Robert Inglis, took an opportunity of laying before the House of Commons an outline of the ministerial plan, both for the establishment of the three new colleges of secular learning and general instruction, and for the endowment of the Roman Catholic Theological College of Maynooth, which had been established by an act of the Irish Parliament in 1795, and had been hitherto dependent for its support only upon an annual grant of very inadequate amount. The two measures thus simultaneously announced and proposed, as in some degree connected with and dependent upon one another, were both carried through parliament in that same session. The Maynooth endowment, however, was made to take the lead. as if to intimate to the general population of Ireland—to what may be more peculiarly called the nationality of the country—that its interests and feelings were what the whole scheme primarily had regard to. If the portion of it relating to the Roman Catholic theological seminary had been defeated, the other portion of it also would probably have been withdrawn. The Maynooth bill encountered a vehement opposition, but it was ultimately passed in both Houses by great majorities. The measure for establishing three secular colleges in Ireland, wholly independent of religious tests or creeds, for the education of the middle classes, was brought forward in the commons by Sir James Graham on the 9th of May. In proposing the second reading of the bill on the 30th, Sir James announced certain alterations which ministers were disposed to make in it, with the view of affording facilities for the theological instruction of the students by clergymen, or lecturers, appointed for that purpose by the several denominations to which they might belong. On the 2d of June, an amendment moved by Lord John Manners for the postponement of the second reading of the bill was negatived, by a majority of 311 to 46. On the 30th, when it was in committee, a proposition from Lord John Russell for making the apparatus of theological instruction in the colleges a part of the establishment to be founded and upheld by the State, was rejected by a majority of 117 to 42. Finally, on the 10th of July the third reading of the bill was carried, against an amendment of Sir Robert Inglis, by a majority of 177 to 126. In the Lords it passed through all its stages without a division.

By this act, entitled "An Act to enable her Majesty to endow new colleges, for the advancement of learning in Ireland," the sum of 100,000*l.* was assigned out of the consolidated fund for purchasing the sites, and erecting and furnishing the buildings, of the three colleges. Her Majesty and her successors were made visitors, with power to appoint, by sign manual, persons to execute the office. The appointment of the presidents, vice-presidents, and professors, was intrusted to the Crown, until parliament should otherwise determine. The commissioners of the treasury were empowered to issue annually a sum not exceeding 7,000*l.*, for the payment of salaries, and other expenses in each college; it being moreover provided that reasonable fees might be exacted from the students. Lecture rooms were directed to be assigned for religious instruction; and it was enacted that no student should be allowed to attend any of the colleges unless he should reside with his parent or guardian, or some near relation, or with a tutor or master of a boarding-house licensed by the president, or in a hall founded and endowed for the reception of students.

A president and vice-president for each college were soon after nominated, and the erection of the buildings was begun. The other appointments were made in August 1849, and the three colleges were opened in the end of October following. An additional sum of 12,000*l.* had shortly before been granted by parliament for providing them with libraries, philosophical instruments and some other requisites.

Originally, it was intended that the number of professors in each college, exclusive of the president and vice-president, should not exceed twelve, and letters patent constituting them upon that basis were passed for each under the great seal of Ireland in December, 1845. Afterwards it was determined that the number should be augmented for the present to nineteen, but that it should not at any time exceed thirty. The vice-president, however, is also a professor. New letters patent embodying that extended scheme were granted in favor of each of the three colleges in November, 1850.

Under the existing constitution, then, the body politic and corporate of each college consists of a president, with a salary of 800*l.* and a house; a vice-president, with a salary of 500*l.* and a house; and professors of Greek, Latin, mathematics, history and English literature, logic and metaphysics, chemistry, natural philosophy, (each with a salary of 250*l.*;) modern languages, natural history, mineralogy and geology, (each with a salary of 200*l.*;) English law, jurisprudence and political economy, civil engineering, and agriculture, (each with a salary of 150*l.*;) the Celtic languages, the practice of surgery, the practice of medicine, materia medica, and midwifery, (each with a salary of 100*l.*) There are also attached to each college a registrar, (with a salary of 200*l.*;) and a bursar and librarian, (each with a salary of 150*l.*) A sum of 300*l.* annually is allowed for the payment of porters and servants. The total annual expenditure for salaries is, thus, (deducting 250*l.* for the professorship held by the vice-president,) 5,500*l.*

The remaining 1,500*l.* of the annual charge on the consolidated fund is allocated to the payment of scholarships and prizes. The scholarships to be awarded at the commencement of the session of 1850–51 at Belfast, are 48 of 24*l.* each to students of the faculty of arts; 4 of 20*l.* each to students of the faculty of medicine; 2 of 20*l.* each to students of the faculty of law; 2 of 20*l.* each to students of civil engineering; and 4 of 15*l.* each to students of agriculture; the number being equally divided in all cases between students of the first and students of the second year. The scholarships are all held for one year only.

The session in all colleges extends from the third Tuesday in October to the second Saturday in June, and is divided into three terms by recesses of a fortnight at Christmas and at Easter. The fees for each class vary from 1*l.* to 2*l.* 10*s.*; and there is besides a payment from each matriculated student to the bursar on behalf of the college of 3*l.* at the commencement of the first year, and 2*l.* at the commencement of every subsequent year.

It had been all along contemplated that matriculation and attendance at these colleges, as at similar institutions established by public authority in our own and other countries, should conduct to graduation both in arts and in every other faculty, except only that of divinity; and all the regulations and arrangements of the academic curiculum in each have been moulded upon that understanding. It was a question for a considerable time whether, with a view to the conferring of degrees and other purposes, each college should be erected into a distinct university or the three constituted into one university. The latter plan has been adopted, undoubtedly to the placing of the new establishments in a greatly superior position to what they would have held if they had been left each to its provincial insulation; for it could never have happened that a mere Belfast, Cork, or Galway Degree would have carried the same weight with one from the Queen's University in Ireland. The letters patent creating such an university have now received the royal signature. Her Majesty has therein been pleased to declare that "graduates of our said university shall be fully possessed of all such rights, priviliges, and immunities as belong to persons holding similar degrees granted them by other universities, and shall be entitled to whatever rank and precedent is derived from similar degrees granted by other universities." The following individuals constituted the government in 1851:

Chancellor—His Excellency GEORGE WILLIAM FREDERICK, EARL OF CLARENDON, K.G. K.C.B. Lord-Lieutenant of Ireland.

Vice-Chancellor—The Rt. Hon. Maziere Brady, Lord High Chancellor of Ireland.

THE SENATE.

His Grace Richard. Archbishop of Dublin.
The Most Reverend Archbishop Daniel Murray. D.D.
The Right Honorable William, Earl of Rosse. K.P.
The Right Honorable Thomas Baron Monteagle, of Brandon.
The Right Honorable Francis Blackburne, Lord Chief Justice of the Queen's Bench.
The Right Honorable Thomas Berry Cusack Smith, Master of the Rolls.
The Right Honorable David Richard Pigot, Lord Chief Baron of the Exchequer.
The Right Honorable Thomas Wyse.
Sir Phillip Crampton, Bart.
The President of the Queen's College, Belfast, for the time being.
The President of the Queen's College, Cork, for the time being.
The President of the Queen's College, Galway, for the time being.
Richard Griffith. LL. D.
Dominic John Corrigan, M.D.
Captain Thomas Askew Larcom, R.E.
James Gibson, Esq., Barrister-at-Law.
Secretary—Robert Ball, Esq., LL.D.

STATUTES, BY-LAWS, AND REGULATIONS.

The Queen's University, founded by Royal Charter, 15th August, 1850, has its seat, and holds its meetings, in the Castle of Dublin, until further order, by warrant of the Lord-Lieutenant.

The Chancellor and Senate are a corporation under the title of the Queen's University in Ireland; may sue, and may be sued, as a common seal, and acquire property not to exceed ten thousand pounds a year.

The government of the University vests in the Chancellor and the Senate. The Chancellor presides over its meetings, and authenticates its acts.

The Senate is formed of the three Presidents of the Queen's Colleges for the time being, and certain other persons appointed by warrant under the sign manual; in all not to exceed twenty. The vice-presidents of colleges may exercise the functions of senators in the absence of their respective presidents. Five members of the Senate constitute a quorum, the chairman having a casting vote.

A vice-chancellor is to be elected annually by the Senate, and when his election is approved of by the Lord-Lieutenant, he is empowered to exercise all the functions of Chancellor in the absence of the latter.

The Senate, in the absence of both Chancellor and Vice-Chancellor, may elect a chairman to conduct ordinary business.

The Senate appoint a secretary and such subordinate officers as may be necessary for dispatch of business.

The Senate have full power to make and alter by-laws and regulations; these being approved by the Lord-Lieutenant, and sealed with the common seal, become binding upon the University.

In all cases not provided for by charter, the Chancellor and Senate shall act in such manner as may appear best calculated to promote the purposes intended by the University.

Meetings of the Senate shall be convened by the secretary or acting-secretary, on the authority of the Chancellor; or, in his absence, of the Vice-Chancellor, or of the chairman of a meeting of the Senate, elected as provided in the charter.

There shall be stated meetings on the 7th of January and 20th of June, in each year, or on the following day, when either of these days shall fall on a Sunday.

The Queen's Colleges of Belfast, Cork, and Galway, are constituted Colleges of the Queen's University, and their professors are considered professors of the University.

The power of the University Senate over the Colleges extends only to the regulation of qualification for the several degrees.

The Queen reserves to herself and successors the office of Visitor, with power to appoint others to execute the duties.

The Chancellor or Vice-Chancellor is required to report annually to the Lord-Lieutenant on the condition and progress of the University.

The Chancellor and Senate have power to found and endow scholarships, prizes, or exhibitions, for which funds may be supplied by grant or donation, under such regulations as they may think fit to make, not interfering with the courses prescribed for scholars of Queen's Colleges, or for matriculation therein.

The Queen's University is empowered to grant degrees in arts, medicine, or laws, to students in the Queen's Colleges who shall have completed the courses of education prescribed by the ordinances. Persons who obtain these degrees shall be possessed of all rights and privileges pertaining to similar degrees granted by other universities or colleges.

The Chancellor and Senate have power to admit, by special grace, graduates of other universities to similar and equal degrees in the Queen's University.

All degrees shall be granted and conferred publicly in the hall of the University.

At all meetings of the Senate to confer degrees, the members shall appear in the full robes they may be entitled to wear in respect of any degrees they may have obtained, or offices they may hold. Any member not possessed of a degree or office, to wear the gown of a master of arts.

Candidates for degrees shall wear the costume of their collegiate standing, and the hoods of the degrees sought.

Candidates being presented to the Senate by the presidents of their colleges, and the secretary having certified that their fees have been paid, and that they have duly passed the examiners, they shall sign the roll of the University, when the Chancellor (or Vice-Chancellor) shall admit them to degrees in the following manner:

> In virtue of my authority as Chancellor (or Vice-Chancellor) I admit you (———) to the degree of (———).

The Chancellor (or Vice-Chancellor) shall then proceed to present publicly any exhibition or medal which may have been awarded.

Examiners are expected to attend the public meeting of the Senate.

The present courses of study required by the University are prescribed in the ordinances which were prepared by the presidents of the colleges, approved of by the Lord-Lieutenant, and adopted by the Senate at its first meetings. These ordinances remain in force until altered by the Senate: such alterations to be subject to the approval of the Lord-Lieutenant.

The qualifications of candidates for degrees shall be examined into at a special meeting of the Senate.

Each candidate is required to fill up, with his own hand, a certificate of his name, birthplace, age, and qualifications.

All certificates of candidates to be sent to the secretary fourteen days before examination.

The Senate will receive certificates of medical education for two-thirds of the required courses, from the professors of universities and chartered bodies, and from schools and hospitals, which have sought for and obtained the recognition of the Senate; but it is essential that one-third, at least, of the medical lectures prescribed in the course for the degree of M.D., be attended in some one of the Queen's Colleges.

Examinations for degrees, and for scholarships and prizes, shall be appointed and directed by the Senate, who shall elect examiners annually.

In no case shall any member of the Senate, or any Vice-President of a college (liable to be called upon to fulfill the duties of a member,) be elected an examiner.

The salaries of examiners shall commence from the next quarter-day after election.

Examinations shall be by printed papers.

Each examiner shall be present during the whole time that the candidates are engaged in writing answers to the papers set by him; but if a paper be set by more than one examiner, the presence of one examiner shall be deemed sufficient; if, from unavoidable necessity, any examiner be unable to attend, the secretary shall be present.

Every member of the Senate shall have the right of being present during examinations, but only the examiner specially appointed to conduct examinations shall have the right to put questions.

No candidates shall be present except those under examination.

The examiners shall report to the Senate the result of their examination, and shall deliver in at the same time, in sealed packets, the answers to the examination papers of the classes which they have severally examined.

The amount of fees to be paid on the granting of degrees shall be directed from time to time by the Chancellor and Senate, with the approbation of the Lord's Commissioners of Her Majesty's Treasury.

For the present, the fee on the degree of M.D. has been fixed at 5*l*., and the fee on the diploma of agriculture, at 2*l*. Fees on other degrees are not yet settled.

The fees are to be carried to the general fund.

Accounts of income and expenditure of the University shall once in each year be submitted to the treasury, subject to such audit as may be directed.

The Bank of Ireland has been appointed treasurer.

Payments shall be made by drafts signed by the Chancellor or Vice-Chancellor, countersigned by the secretary.

Although much clamor has been raised against the Queen's Colleges, because, in the distracted state of Ireland in religious matters, the British Parliament has at last attempted to establish a plan of liberal education, the special purpose and profession of which is to communicate instruction in certain branches of human knowledge to classes which may be composed of young people belonging to various religious denom fications, we believe there is no ground for alarm, or distrust, for the safety of the religious principles of the students who may resort to them. On the other hand, securities are provided, more protective and and conservative than exist in any other academic institution in the empire, which are open to other than students of one religious denomination.

At the ancient national universities of Oxford and Cambridge, and Trinity College, Dublin, there are no arrangements which even recognize the existence of any form of religious belief but that of the Established Church; not only is the student who may hold any other creed (in so far as such dissenting students are admitted at all) left without any spiritual superintendence whatever, but the entire system of teaching and discipline is in the hands of members of the church established by law, and is regulated and administered in all respects in conformity with the doctrines and ritual of that church. Yet, Roman Catholics generally have long been in the habit of sending their sons without hesitation or scruple to the university of Dublin; freedom of admission to Oxford and Cambridge has always been one of the demands which Protestant dissenters have urged most clamorously; and no non-conformist community has ever put forth an authoritative denunciation of either the demand or the practice.

In the Scottish universities the professors are all by law members of the Presbyterian Established Church; any seasoning of theology, therefore, that may insinuate itself into the lectures delivered by them, or their mode of teaching, must be Presbyterian; it may be Presbyterian of the strongest and, to all but the disciples of Calvin and John Knox, of the most offensive flavor. On the other hand, at least at Edinburg and Glasgow, there is no religious superintendence of the students whatever. So here is the extreme of rigor and exclusiveness, combined with the extreme of laxity and neglect. Yet these universities are attended by members of all communions; and certainly it is not the liberality of the system in giving free admission to all sects which any body of dissenters has ever made matter of complaint.

In University College, London, there is the same freedom of admission for students of all descriptions as at the Scotch colleges, with the same entire absence of religious superintendence as at Edinburg and Glasgow; and no religious test is applied to the professors any more than to the students. Many religious fathers of all denominations, nevertheless, have been accustomed ever since it was established to send their sons to be educated in all the great branches of human learning at University College.

In the first place, every professor in these Irish colleges, upon entering into office, signs a declaration promising and engaging that, in his lectures and examinations, and in the performance of all other duties connected with his chair, he will carefully abstain from teaching or advancing any doctrine, or making any statement, either derogatory to the truths of revealed religion, or injurious or disrespectful to the religious convictions of any portion of his class or audience. And it is enacted, that, if he shall in any respect violate this engagement, he shall be summoned before the College Council, where, upon sufficient evidence of his having so transgressed, he shall be formally warned and reprimanded by the president; and that, if he shall be guilty of a repetition of said or similar offense, the president shall forthwith suspend him from his functions, and take steps officially to recommend to the Crown his removal from office. The appointments of the professors are all held during the pleasure of the Crown. A triennial visitation of each college is ordained to be held during the college session by a Board of Visitors which has already been appointed by the Crown, and which comprises the heads of the Episcopalian, Presbyterian, and Roman Catholic churches in Ireland.

But further, every student is actually subjected to an extent of religious superintendence such as is enforced nowhere else, unless it be only at Oxford and Cambridge. No matriculated student under the age of twenty-one years is permitted to reside except with his parent or guardian, or with some relation or friend to whose care he shall have been committed by his parent or guardian, and who shall be approved of by the president of the college, or in a boarding-house licensed by the president upon a certificate, produced by the person keeping it, of moral and religious character from his clergyman or minister. The relation or friend to whose care a student is committed must in all cases formally accept the charge of his moral and religious conduct. Clergymen, each approved by the bishop, moderator, or constituted authority of his church or religious denomination, are appointed by the Crown Deans of Residences, to have the moral care and spiritual charge of the students of their respective creeds residing in the licensed boarding-houses; and it is provided that they shall have authority to visit such boarding-houses for the purpose of affording religious instruction to such students, and shall also have power, with the concurrence of the president of the college, and of the authorities of their respective churches, "to make regulations for the due observance of the religious duties of such students, and for securing their regular attendance on divine worship." Finally, at the head of the list of offenses in the statutes of each college for which it is enacted that any student shall be liable to expulsion, are the following: "1. Habitual neglect of attendance for divine worship at such church or chapel as shall be approved by his parents or guardians; 2. Habitual neglect of attendance on the religious instruction provided for students of his church or denomination in the licensed boarding-house in which he may reside."

about 2000 students. Ireland had but one, and even this one was from its constitution not available for the nation at large. The result was that of nearly 6,000,000 of Roman Catholics in Ireland, about 100 were receiving a university education.

In providing a remedy for the evil thus distinctly recognized, three courses were opened to the legislature. It might have opened the emoluments of Trinity College, Dublin, to all classes of the population without religious distinction; or again, it might have founded colleges for the several religious communities which divide the country amongst them; lastly, it had the alternative of establishing colleges based upon the principle of religious equality—colleges which should give combined secular instruction, and which, whilst they afforded facilities to the various ministers of the Christian faith to teach their respective forms, should steadily repudiate all interference, positive or negative, with the conscientious scruples of their students.

To the first two courses there were insuperable objections. Trinity College was a Protestant foundation, endowed for the propagation of the Protestant faith, and more especially designed as a nursery for the clergy of the Established Church in Ireland. The attempt to open its emoluments to Roman Catholics and Dissenters, not to speak of the shock it would have given to the sentiment of property, would have called forth such a storm of Protestant feeling as would have rendered it wholly impracticable.

Not only was the combined system alone tenable in theory, but its prodigious growth had shown its singular adaptation to the circumstances of the country. It was this consideration which mainly swayed the minds of the Government in its favor. They are the crown of an edifice designed on the plan of religious equality, and which must not have its symmetry marred by the introduction of any thing heterogeneous to its great idea.

The first criterion of the success of the Colleges is, of course, the number of students who have entered them. On referring to the Calendar of the Queen's University, we find that the total number of students who had entered the Queen's Colleges from the first session in 1849–50 to March 1859, amounted to 1786, of whom 1,265 were matriculated, 521 non-matriculated—that is, students who have not passed the matriculation examination, and do not pursue all the subjects included in the university curriculum, but particular courses of instruction which they may select.

The only sure method of determining the question of failure or success is by comparison with some institution, the position of which is unchallenged. We will take Trinity College, Dublin. The number of students who entered in Dublin during the ten years mentioned above was 2,745. Hence the ratio of the average annual entrances of the institutions compared over a period of ten years is as 178 to 274. Such an average, however, would do injustice to the Queen's Colleges, the numbers of which are steadily increasing. Thus in the year 1858–59, 196 new students entered, while in 1859–60, the number amounts to 207.

If failure can not be predicted of the Queen's Colleges on the score of numbers, no more can it be said that they have failed in their great object of giving united education to the youth of the various religious persuasions. In the ten years, 1849–59, the three great religious communities, which make up the bulk of the population, are thus represented among the matriculated students:—

Established Church,................................	426
Roman Catholics,................................	445
Presbyterians,................................	343

While the 297 students, who have entered this year, as thus distributed:—

Established Church,................................	60
Roman Catholics,................................	69
Presbyterians,................................	59
Other denominations,................................	19

The first thing that strikes us in reading these numbers is, that the Roman Catholics in each case head the list.

Passing to the quality of the education given in the Queen's Colleges, on this score but little needs be said on their behalf. The competence of the professors has, we believe, never been questioned, any more than their zeal, not only in maintaining the existing standard of education, but in elevating it to the highest point which the circumstances of the country admit. Nor have their exertions been unrewarded. Fortunately, on this subject, we are not left to conjecture. We have seen that the competitive examinations for the Indian Civil Service were designed to be a test of "the best, the most liberal, the most finished education, which the country provides;" and a careful study of the papers set will show that the examiners have not willingly let them fall below this standard. The examinations are in effect framed on the model of those to which in the universities candidates for the highest honors at the close of their undergraduate course are subjected. They supply, therefore, a fair criterion of the comparative efficiency of our educational institutions. As the universities bring into concourse the youth of their affiliated colleges, so these examinations introduce into a still wider arena the youth of the several universities. It is, then, with just pride that the Queen's University appeals to the fact, that, in this competition, looking merely to the number of places obtained, it stands next in order to the Universities of Oxford, Cambridge, and Dublin. If, however, we regard the quality of the answering, the result is still more in favor of the Queen's University. In the only years in which the Universities we have named came into conflict, the average answering of the successful candidates from each stood as follows:—

	1856.	1857.	1859.
Oxford,......................	1,948	1,982	2,103
Cambridge,....................	2,062	2,207	2,020
Dublin,.......................	2,473	2,082	2,139
Queen's University,...........	1,955	2,261	2,160

It thus appears that in the last two years the candidates from the Queen's University stood first, in the preceding year third, in the list. This is sufficiently striking, but we can not forbear commemorating a signal instance of success obtained by one of the Colleges. It will be ever memorable in the annals of the College of Belfast, that, while numbering not 200 students, it bore away at this examination, from all our highest seats of learning, the first, fourth, and ninth of twelve vacant places. So much for the direct action of the Queen's Colleges upon the country: no less important has been their indirect influence.

1. It is surely more than a chance coincidence, that within the last ten years, nearly the whole curriculum of the University of Dublin has been changed; all the leading changes being approximations to the curriculum of the Queen's University. Nor is it merely the courses of study which have been revolutionized; the efficiency of the teaching has, in the same period, been vastly increased. Professorial chairs, which had become almost sinecures, have been rehabilitated, and raised by their occupants to a position of dignity and usefulness. Can we be mistaken in attributing this reforming spirit to the emulation of the Queen's Colleges, or in discerning the same influence in the liberality, which has recently endowed scholarships in the same University (some of them of great value,) open to candidates of all religious persuasions.

2. Such has been the silent recognition which the ancient University of Ireland has given to her youthful sister. Elsewhere the recognition has been, if not more obvious, more avowed. In the year 1855, the Secretary of the Queen's University received a letter from the Regius Professor of Law in the University of Cambridge, in which, after requesting copies of the University Examination Papers, as being so admirably adapted to students of the principles of law, "that I should wish to make use of them as much as I can," he adds—"But it is not only in their law papers that your colleges show their merit and utility. The whole system of education pursued by you is, in my humble opinion, so good, and so well suited to the times, that I sincerely trust that it may defy all opposition."

3. Through them was first discovered the wretched condition of intermediate education in Ireland. * * Universities without schools are but castles in the air.

The Chancellor of the Queen's University, on the occasion of conferring degrees on the 12th of October, 1860, spoke as follows:—

I have the gratification of being able to announce that the number of the students who have passed our several examinations for the current year exceeds that of those so distinguished on any previous occasion, and is very much in advance of that of 1859, the largest former number, that of the year 1858, having been seventy-six, while that of 1860 amounts to eighty, and in which I find an increase of twenty-two over the number in the past year.

The total number of those whose names were sent in as candidates for examination at this period was somewhat larger, being one hundred and thirty-two, but of these a considerable number failed to present themselves before the examiners, and a few—nine in all—although coming forward for examination, have not been found by the examiners to be sufficiently qualified. I trust that on a future occasion they will appear before us with far better success. In addition to the satisfaction derived from this increase in the number of our candidates, I am happy to be able to add that our examiners generally testify to a high standard of qualification being evinced, as well by those who have competed for special honors as by the entire class of successful students. The university honors, consisting of medals and pecuniary prizes, have been attained by twenty-five of the students present at the examinations, and his Excellency the Lord-Lieutenant has been pleased to assent to the request of the senate, that he would personally deliver to the successful candidates those gratifying evidences of their abilities and industry. Six graduates of other universities have been admitted by the senate to take corresponding degrees in this, which will accordingly be conferred upon them. The Colleges were first opened for the reception of students in the year 1849, and it is only eight years since the first meeting of the senate of the Queen's University to confer degrees was held in this hall. In the colleges the total number of matriculated students, including those of the current collegiate year, has amounted to one thousand four hundred and twenty-three; the number of students who have not matriculated, but who have resorted to the colleges for instruction in various branches of knowledge, has been five hundred and seventy. Thus, very nearly two thousand individuals have entered either as matriculated or non-matriculated students in, I may say, the first ten years of their existence, and the numbers attending the superior classes in the colleges in this year is five hundred and forty-six. In the University we have in the eight years of its action admitted to the degree of Bachelor of Arts, including those presented to us to-day, the total number of one hundred and ninety-eight; to that of Doctor of Medicine, ninety-three; and to that of Master of Arts, fifty-two. We have granted to two the degree of Doctor of Laws, and to eleven that of Bachelor in that faculty. The names of three hundred and fifty-six graduates in each of the various degrees have thus been placed on the roll of the University, while our minor distinctions of diplomas in engineering, law, and agriculture, have been conferred respectively on forty-seven students. In regard to the most important of the social relations of the community—perhaps I must rather, though reluctantly, say, the most prominent of their differences, that which arises from the varying forms of religious worship—the number of the collegiate students represent all the classes into which, in this particular, our population stands divided. The members of the Established Church, the Roman Catholics, the Presbyterians, the Wesleyans, the Covenanters, the Independents, the Seceders, the members of the Society of Friends—all in greater or less proportion, as might be expected from their relative numbers in each locality, have had, and have, their representatives in this common body of associated students; and the general benefit of our collegiate and university system, as they have been freely offered to all classes of our fellow-subjects, have by all been thus freely accepted and enjoyed.

XI. PUBLIC INSTRUCTION IN AUSTRIA.

OUTLINE OF THE SYSTEM.

AUSTRIA has a system* of education which, from the village school to the university, is gratuitously open to all, and which, in all its departments, is based on religion, and governed and molded by the State. Its universality is secured not by direct compulsion, as in Prussia, but by enactments which render a certificate of school attendance and educational proficiency necessary to exercise a trade, or be employed as a workman,† to engage in the service of the State in any capacity, or to be married. Besides this, it is made the interest of the wealthy landholders to contribute liberally for the education of their tenants and the poor, by throwing upon them the support of the pauper population.

All the institutions for education are under the supervision of a Board or Council (the Hof-studien Commission) at Vienna, composed of laymen appointed by the crown, and at the head of which a Minister of Public Instruction was placed in 1848. It is the duty of this body to investigate all complaints against these institutions; suggest and prepare plans of improvement, and counsel the crown in all matters referred to them. Under them is a graduated system of superintendence, to be exercised jointly, by the civil and spiritual authorities in the various subdivisions of the empire. The bishop and his consistory, jointly with the landestelle, has charge of all the scholastic institutions of the diocese; the rural dean, jointly with the kreisamt, of those of a district: the parochial incumbent, and the civil commissary, those of a parish. This general arrangement has reference to the Catholic establishment; but the proper authorities of the Protestant, Greek, and Hebrew churches are substituted for those of the Catholic, for all that regards the members of their several communions.

There are six classes of schools subjected to the superintendence of the education-board; namely, the popular, the gymnasial, the philosophical, the medico-chirurgical, the juridical, and the theological. The four last of these form separately the objects of various special institutions; and, combined together, they constitute the four faculties of the universities.

The gymnasium is the school for classical learning, mathematics, and elementary philosophy.

The popular schools comprehend the establishments of various degrees, in which instruction is imparted of a more practical character, to those whose station in life does not fit them for the study of the learned languages. The lowest of these are the *volks-schulen*, or, as they are often termed, the *trivial* or the *German* schools, established, or intended to be established, in every district or parish of town or county, for the primary instruction in religion and morality, reading, writing, and accounts. In the larger places are also numerous *upper schools*, *haupt-schulen*, wherein a somewhat more extended education is given, for persons designed for the mechanical arts and other similar pursuits. These have an upper class called Wiederholungs-schulen, or Repetition Schools, who receive instruction in drawing, elementary geometry, and geography, and with it is combined a Normal School for teachers in the volks-schulen. In the larger towns are also commercial academies, termed *real-schulen*, in which are comprised two divisions of scholars: the one general, receiving instruction in accounts, geography, and history; the other special, having, in addition thereto, teachers in book-keeping and the principles of trade for mercantile pupils, in natural history and rural economy for those intended for agricultural life, in mathematics, chemistry, and principles of art for students in the higher arts, and in various foreign languages, especially English, French, and Italian, for those who may desire to receive such instruction. In the *volks-schulen* girls are taught, except in rare instances, in separate rooms from the boys; and for the superior instruction of females there are distinct establishments corresponding with the *haupt-schulen* and *real-schulen* of the boys, many of them managed and directed by certain communities of nuns, which are especially preserved for the purpose of education. Industrial schools of various kinds, and for both sexes, are also in some parts combined with these more general educational institutions; but the expenses attending such establishments prevent their being very numerous.

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* The following account of the educational system of Austria is abridged mainly from Turnbull's Austria.

† Turnbull mentions an instance of a large manufacturer in Bohemia, who was fined for employing a workman not provided with the requisite certificates of education.

The establishments thus last described constitute the class of *popular* schools. The next above these are the *gymnasial;* of which there are one, or two, or several, in each district, according to the extent of its population. The pupils of the gymnasium are divided into several classes: the earlier ones are taught in religion, moral philosophy, elementary mathematics and physics, and Latin philology. To these subjects are added, for the more advanced classes—partly as perfect courses at the gymnasium, and partly as introductory to the higher instruction in the same branches at the lyceum or university—general history (and especially that of Austria), classical literature, Greek philology, æsthetics (namely, rhetoric, poetry, and a knowledge of the fine arts), and the history of philosophy. Above the gymnasium are the eight universities of Prague, Vienna, Padua, Pavia, Lemberg, Gratz, Olmutz, and Innspruck; to which must be added the Hungarian university at Pesth. These are divided into two orders—those of Prague, Vienna, Padua, Pavia, and Pesth, are of the first, having chairs for all the four faculties of theology, law, medicine, and philosophy; the others have a smaller number—~~as~~, for instance, Gratz, which has but three, having no professorship of medicine, and Lemberg, which has only two. In further addition, according to circumstances and localities, professorships are established, either at the gymnasium, the lyceum, or the university, in the Italian and Oriental languages, in theoretical agriculture, astronomy, chemistry mechanics, and other branches of practical science.

In most of the provincial capitals, where no university exists (in such towns, for instance, as Linz, Laybach, Klagenfurt, &c.), there is an institution, under the name of *Lyceum*, which answers the purpose of a minor university; wherein public courses of lectures are given in some or all of the four faculties, and in other branches of knowledge. The *degree* cannot, indeed, be taken at the lyceum in any of the faculties; but certificates may be there obtained, which are accepted in lieu of those of the universities, for a large number of cases where certificates are required, and for youths who require them not, the education of the lyceum, extending as it does to the highest Greek and Latin classics, and natural philosophy, answers every purpose of general education. Of these lyceums, there are, in the empire, twenty-three under Roman Catholic direction; besides eleven Protestant, Lutheran or Calvinist, and one Unitarian. For the instruction of the Hebrew subjects there are gymnasiums and other schools, wherein the same books are read as in the general establishments of the empire, except only that works of Jewish are substituted for those of Christian theology. In special branches of knowledge, the government establishments are very numerous: medical and surgical academies, clerical academies, polytechnic schools, military institutions in all branches, and a college for the Eastern languages, &c.

The popular schools are inspected and directed by the parochial incumbent, who, with a view to this duty, is bound to receive instruction, previous to his induction to a benefice, in the system of scholastic management, or, as it is termed in the language of the edicts, the *science of pædagogy*. He is required, at least twice a week, at certain fixed hours, to examine and catechise the pupils, and to impart to them religious instruction; the parish or district being obliged to provide him with a carriage for that purpose, when the schools to be visited are distant from his residence. He orders removals from lower to higher classes, and grants those certificates, without which no pupil can pass from the popular school to the gymnasium. He is bound to render, periodically, statistical and discriminating returns on the state of the schools, both to his spiritual superior and to the kreisamt; to urge on parents the great importance of education to their offspring; and to supply books to those who cannot afford to purchase them, and clothes (so far as the poor fund or private contribution may enable him to do so) to such as, for want of clothing, are prevented attending the schools. Where children of different creeds are intermixed in one school, religious instruction and catechization is confined to the last hour of the morning and afternoon attendance, during which hour the non-Romanists are dismissed, to receive instruction elsewhere from their respective pastors; but where the number of non-Romanists is sufficiently great to support a separate school, the minister of that persuasion, whatever it may be, is charged exclusively with the same duties as, in the general schools, are imposed on the parish priest. To ministers of all professions an equal recourse is, by the terms of the ordinances, allowed to the aid of the poor fund and of the grants from the kreisamt. If the schools be too distant or too numerous for the proper supervision of the local minister, a separate instructor is named by the bishop, or, if the school be Protestant, by the provincial superintendent; and, for the visitors of all denominations, the expense of a carriage is equally borne by the public. Except in the points above enumerated, the parochial minister has no power to act, but only to report; in all those connected with defects or deficiencies of the buildings, he, in conjunction with the civil commissary, reports to the kreisamt, and in those of merely scholastic nature, as well as in the conduct of the teachers, he addresses his remarks to the inspector of the district.

The teachers at all the popular schools are required to produce testimonials from the Normal School at which they have been instructed, and receive their appointment from the diocesan consistory, or from the provincial chief of any special religions for which they may be intended, but require in all cases the confirmation of the landestelle. They are provided with residences attached to the schools, together with fixed stipends during good health and good conduct, and are allowed superannuation pensions, which, if they shall have served for a period of ten years, are extended to their widows, and to their orphans under fourteen years of age.

Each district has an *aufseher*, or *inspector* (named by the bishop from among the parochial clergy holding benefices therein), who compiles detailed statements on every point connected with education, for his spiritual superior, and for the kreisamt. Once a year he makes a tour of personal inspection, examines the pupils, distributes rewards to the best scholars, and supervises alike both the ministry and the teachers; most especially enforcing the rule, that those books only shall be used, and those instructions only be given, which have been commanded by imperial edict. Above these district inspectors, each diocese has a higher officer, under the name of *oberaufseher*, or inspector-general, who is named by the crown, and is in most cases a member of the cathedral chapter. His supervision extends not to the *volksschulen* only, but also to the *real* and the *haupt-schulen*; and for these purposes he is the *district-inspector* for the city of his residence, and the *inspector-general* for the whole diocese. He is the official referee, whose opinion the consistory are bound to demand in every exercise of their educational functions, and by whom they are in fact principally guided; since every matter wherein their sentiments may not agree with his, must be referred to the decision of the landestelle. He examines and certifies teachers for appointment by the consistory; receives quarterly statements in all details from his subordinate inspectors, and embodies them into general reports, for the landestelle and the crown; finally, as supervisor of spiritual instruction, he examines candidates for orders, and novices for monastic vows, and grants certain testimonials of proficiency which are indispensable for their admission.

To the *episcopal consistories*, headed by the bishop, is committed the general supervision of all the scholastic concerns of the diocese, the regulations of matters of discipline, the communication of instruction, and the investigation of delinquencies. It is a part of their functions to order the erection of schools, to appoint the teachers, to authorize the payment of pensions to teachers in sickness or in age, and to their widows and orphans, when entitled to them; but in these points, as in all others which involve any exercise of real authority, patronage, or influence, their acts are invalid without the confirmation of the landestelle. For the professors of non-Romanist creeds, these respective functions are discharged in their several gradations by officers of their own persuasion. The Protestant *seniors* and *superintendents* are the district-inspectors and the provincial inspectors-general for their respective communities; and the functions of the diocesan consistories are transferred to the central Calvinistic and Lutheran consistories at Vienna.

The schools of higher degree, the Gymnasium, the Lyceum, the Theological Seminary, and the University, are all, as well as the popular schools, more or less subjected to the supervision of the diocesan and his consistory; but these depend more immediately on the educational board at Vienna. Over each of them presides a director, who is charged with the general management, in point both of discipline and instruction, acting under the orders of the board, or the edicts of the emperor. The various professors and teachers are all either named or approved by the landestelle, or the educational board; the same discriminating precautions being adopted as at the popular schools, for the religious instruction of those who profess non-Romish creeds. In every station, and in the various branches of education, the pupils are subjected to half-yearly examinations by authorized visitors; and from the result of these examinations, as well as from the testimonials which each is bound to produce as to moral conduct, and also as to religious knowledge from the minister of his communion, the director forms the reports which are furnished to the government.

For the erection of *popular* schools, certain rules are laid down which insure their erection as occasion may require. Although no ordinances compel education, yet the inducements held out to desire it are so great, that for schools of this description there is a constantly increasing demand, partly arising from the people themselves, and partly instigated by the spiritual and civil authorities; and, indeed, so urgent have of late years been applications to this effect, that it has become a usual, although not universal practice, to require of the parishioners, or the inhabitants of the district petitioning, that they shall bind themselves by voluntary assessment to bear the whole or a portion of the attendant expenses. After the locality has been fixed by the aufseher and the kreisamt, it depends on the landestelle to issue the decree that the school be built; and, this being done, the law then provides for its gratuitous erection and completion. The lord of the soil is bound to grant the land and the materials; the inhabitants of the district to supply the labor; and the patron of the parochial benefice the internal fittings-up; all subsequent repairs, as well as the hiring of buildings for temporary accommodation, being a charge on these three parties jointly.

Notwithstanding, however, these ample provisions for general education, it will be readily conceived, that in a country where certain classes possess large pecuniary means and high aristocratic feelings, instruction cannot be absolutely confined to public institutions. In Vienna and other cities, many academic establishments of a superior order exist, endowed in the manner of our public schools; and in these, or in the schools of the monasteries before mentioned, wherein boarders are permitted to be received, or, finally, under private tutors in their own families, a large portion of the higher classes receive their education.

In addition to the above summary of the system of primary schools in Austria, we present a few particulars as to the inspection of teachers and schools. The law requires that every district inspector, or overseer, must take care—

1. That his district is supplied with a sufficient number of school-buildings; and for this end, he is empowered, in conjunction with the village or town magistrates, to levy a school-rate upon the householders of his district.

2. That all the new school-buildings, which are erected from time to time in his district, are built in healthy situations, not near any noisy workshops, or any swamp or bad smells; that the class-rooms are built according to the plans, which have been prescribed by government; that the class-rooms are well provided with desks, forms, writing-boards, maps, and all necessary school apparatus.

3. That the school-buildings are kept in good repair, well and frequently white washed, and well warmed and lighted.

4. That a good and suitable house is provided for the teachers and their families, and that it is kept in a good condition and fit for their use.

5. That the *curé* of each parish regularly inspects his school; that he watches the conduct and character of the teacher; that he examines the scholars frequently; and that he aids the teacher by his counsel, advice, and assistance.

6. That the parishioners send all their children, who are between the ages of six and twelve, to school regularly, and that they pay the weekly school-fees in a regular manner.

7. That each parochial magistrate is zealous, in enforcing a regular school attendance, in supporting the teachers, and in protecting them from the least disrespectful treatment.

8. That regular periodical reports of the state and progress of the schools in his district are forwarded to the county educational magistrates; who, in their turn, are required to forward a general report of the progress of education in the whole country to the Minister of Education in Vienna.

By these means the government in Vienna is informed every year of the actual state and progress of education, throughout every parish of their great empire; of the wants and difficulties of those districts which require assistance; of the results of particular experiments in particular schools, in the remotest provinces; and of the actual number of children in each county, who have not attended the classes with sufficient regularity.

Each inspector must visit all the primary schools in his district at least once every year.

For this purpose he is required to divide all the schools in his district into two parts, and to visit one of these in the latter part of one year, and in the early part of the succeeding year, so as to see each school in spring and winter alternately.

The overseer is required to give public notice some time previously of his intention to visit any school, and of the day upon which he will publicly examine it.

The law *requires* the parochial magistrates, the religious minister, to whose sect the school belongs, and a committee of the householders of the parish, to be present at the examination, and impose a penalty on any of those persons, who absents himself without satisfactory excuse. The overseer is required to write down the names of the absentees, in order that the magistrates may be informed, and may impose a legal fine to which their absence renders them liable.

The teacher is required by law to give all his children notice of the day, on which the examination will take place, and to order them all to attend at a certain hour. He is also required to bring the book, in which the daily absentees are marked down, the copy-books and exercises of the scholars, the monthly register of the way, in which each child has attended to his work, an account of the progress the classes have made in the several subjects of instruction, and any notes or observations he may have made in his note-book for the inspector. These several documents are laid before the overseer at the public examination, and are examined by him. The knowledge that this will be done stimulates both scholars and teachers, as each is as unwilling to be reproved for carelessness or incompetency, as he is anxious to be praised for industry and skill.

The law next directs each overseer—

1. To examine what character the teacher has borne in his neighborhood; how he acts toward his scholars, and toward those who live about him; whether he teaches skillfully or not; what methods of teaching he pursues; whether he is industrious and zealous in his work, and whether he continues to aim at self-improvement.

2. To examine the registers of the school, and to observe, how often each child has been absent from the classes; to observe the manners of the children in the classes and in the play-ground, the manner in which they answer the questions put to them, their demeanor to one another and to their teachers, their appearance, cleanliness, and the state of their health.

3. To observe what interest the parishioners and parents take in the state of the school, and in the education of their children; how far they assist the teacher to secure a regular attendance; what excuses they generally make for the occasional absences of their children; with what degree of respect they treat the teachers; and whether they pay the weekly school-pence regularly.

4. To observe the state of the school-buildings, whether they are built in a healthy locality, and after a good and reasonable plan; whether the class-rooms are dry and light; whether they are furnished with sufficient school-apparatus; and whether they are supplied with sufficient quantities of fuel for the daily consumption during winter.

5. Whether the religious ministers of the sect, to which the majority of the scholars belongs, visits and inspects the school-classes often; whether he treats the teachers in a wise and judicious manner; whether he uses his influence among the parents to secure a regular attendance at school; and whether he attempts to diminish any little misunderstandings between the teachers and parishioners, when any such arise.

6. Whether the civil magistrates are strict in punishing any infraction of the school regulations.

The law then proceeds to require, that as soon as the overseer has examined the lists, &c., laid before him, he shall commence the examination. It is formally opened by a short prayer and a speech. After this the overseer examines the children, class after class, beginning with the first.

He first requires the children to read aloud something selected from their school-books, and then questions them about the subject matter of the exercise.

He selects some particular child to answer each question he asks, and does not allow the whole class to shout an answer to it simultaneously, so as to conceal the idleness and ignorance of some by the knowledge and ability of others.

The overseer then dictates something to the school, and requires them to write from his dictation. The scholars are then made to write a copy, and are afterward examined in arithmetic and mental calculation.

The overseer is particularly required to observe, during the course of the examination, whether there are any scholars, who appear to have been neglected by the teachers, or whether the instruction has been bestowed equally upon all.

The law requires the overseer at the end of the examination, to read aloud to the whole meeting, the names of the twelve scholars, who in his opinion have made the greatest progress in their studies, or who have evidently been the most industrious; to praise them publicly for their industry and ability, and to encourage them and all the rest of the scholars to renewed exertion.

The overseer is next required to publicly reprove any scholar, who has been very idle or negligent in his studies, or in his attendance, and then to urge the children to make fresh exertion to prepare for the next public examination.

After the examination is concluded, the overseer orders whatever repairs the school-building stand in need of, and whatever books and apparatus are required for the class-rooms. He then asks the parochial magistrates and clergy privately, if they have any fault to find with the teachers, and if they have, he examines into the cause of complaint, and acts between the parties as impartial judge. On the other hand, if the teachers have any cause of complaint against the parochial authorities, they state it to the overseer, and he, after examining into the matter, decides upon it as an arbitrator, and as a protector of the teachers.

I have no need to point out how these visits of the representative of the central governments stimulate all the teachers, children, and parishioners. Each is afraid to be found behindhand in the performance of his duties; and each is desirous to merit public praise for his efforts and success. The teacher is protected from neglect, insult, or injudicious interference, while he is at the same time kept under a wholesome check. His close connection with the emissary of the government of the empire, gives him a standing among his neighbors, and covers himself and his office with the respect of the people.

The law respecting the teacher of a primary school prescribes as follows:

The teacher of a primary school must be a person of good sense, having a good, clear pronunciation, good health, and a sound constitution.

The teacher must not merely understand the science of pedagogy, but he must be able to practice it. In order that he may do this, he must not be satisfied with merely having obtained his diploma; he must afterward seek to perfect his knowledge by the study of able and scientific works upon this science; he must make and note down observations on the results of different methods; he must not feel ashamed to learn from other teachers, or even from his own assistants; and he must attend to the remarks and advice of the inspectors.

He must be careful to speak clearly and loud enough to be heard by all his class, when giving instruction.

He must be careful not to neglect any of his scholars, by attending too exclusively to the more clever children.

He must be particularly careful to make his scholars obedient, orderly, and quiet in their classes, industrious, modest, clean, and polite.

He must never endure a lie, and must prevent tale-telling, teazing, and vexing of one scholar by another, buying, selling, and exchanging in school, eating during the hours of instruction, frequent going out of the class-room, careless sitting postures, and *concealment of the hands.*

He must be most careful to prevent any unnecessary loitering in coming to school, or in returning home, all rough handling of the school-books, loud and unseemly shouting and screaming, and mingling of the boys and girls, &c.

He must take care that the children are clean; that they come to school with clean hands and faces, with cut nails, with combed hair, and with tidy clothes.

He must warn the children not to drink, or to lie down upon the cold ground, when they are hot.

He must warn the children against eating roots or berries, whose properties they do not know, and against playing near deep water, or in public streets.

In winter he must take care that the children shake the snow from their clothes and shoes outside the school door.

He must send unhealthy children home again, and prevent them mingling with the others

He must take care that the school-room is kept sufficiently warm; that it is well aired when the children are out, and that it is well cleaned every second day.

In order to make the scholars industrious and obedient, the teacher must win the respect of his scholars; he can not do this by a sullen, angry countenance, or by using the ruler, or by making a noise; but by evincing knowledge of his business, by command over himself, and by a manly, sensible, and *unchangeable* behavior.

If the teacher leaves his class-room often in the day, or is inattentive or careless in his manner of imparting instruction, or is lazy, impatient, or irritable, the consequence will be, that his scholars will be disorderly, and will gain little or no good from their school attendance.

The teacher must guard against the extremes of both kindness and harshness; he must act like an affectionate, but sensible father; he must make a great distinction between his manner of reproving acts of mere childish carelessness, and actual sins; he must never employ severe punishments, as long as he can hope to succeed by milder means; and he must avoid any thing like unfairness in his praises and punishments.

The teacher must carefully avoid hastily resorting to the rod; he must never box a child's ears; or pull or pinch them; or pull its hair; or hit him on the head, or any tender part; or use any other instrument of punishment, than a rod or stick; and that only in cases of great faults. Even in these cases, this kind of punishment may only be administered after having obtained the consent of the overseer, and of the parents of the child, and in their presence.

The teacher must take care to be polite and friendly to the parents of his scholars; if he is obliged to complain to any of them of their children, he must do it, without showing any thing like personal irritation; he must never send his complaints to them by any of his scholars, or by third persons; for, by such means mistakes are easily made, and unkind feelings are often excited.

If the teacher is obliged to speak severely to any one, he must be careful not to do so in the presence of his children.

The teacher must not engage in any trade or business; he must not keep a shop, he must not play music at public festivities, and he must avoid all companies and places, which would be likely to throw any suspicion on his character, or to injure his reputation.

SCHOOLS FOR ELEMENTARY EDUCATION, IN AUSTRIA, IN 1838.

Countries.	Population in 1838.	Children from 5 to 13 years of age.	Primary Schools.		Repetition Schools.		Sexes attending school.		Total Children at school.	Instructors.			Cost of Schools in Florins.
			No. of Primary Schools.	Children in actual attendance.	No. of Repetition Schools.	Children in actual attendance.	Boys.	Girls.		Religious.	Lay.	Total.	
Lower Austria	1,400,000	157,105	1,101	154,179	1,019	58,200	113,891	98,488	212,379	1,127	2,212	3,339	341,007
Upper Austria	846,000	90,576	626	86,485	606	41,435	65,580	62,340	127,920	718	1,114	1,832	185,371
Bohemia..............	4,173,000	526,569	3,470	494,229	3,431	229,812	376,560	347,481	724,041	1,361	5,781	7,142	475,967
Moravia and Silesia...	2,172,000	287,782	1,886	272,638	1,855	177,239	231,826	218,051	449,877	1,399	3,026	4,425	264,706
Gallicia..............	4,728,000	514,308	1,869	67,278	591	30,022	67,065	30,235	97,300	905	2,037	2,942	124,627
Tyrol.................	839,000	106,439	1,618	107,507	1,191	46,678	80,697	73,483	154,180	1,539	2,185	3,724	101,486
Styria	976,000	101,990	624	76,869	567	35,106	61,463	50,512	111,975	647	967	1,614	89,626
Carynthia and Carniola	764,000	85,538	865	27,817	404	16,805	24,435	20,187	44,622	358	518	876	110,545
Illyrian coast.........	476,000	59,250	111	9,917	84	3,816	9,588	8,650	18,238	101	226	327	65,788
Lombardy and Venice	3,664,000	588,665	5,178	258,009	230	3,966	191,167	70,808	261,975	3,697	5,905	9,602	326,800
Transylvania.........	2,026,000	202,600	1,522	51,848	30	720	32,585	19,583	52,068	423	1,507	1,930	60,000
Military Frontier.....	1,198,000	126,674	1,113	64,550	776	20,908	56,308	29,150	85,458	862	1,266	2,128	180,598
Dalmatia	390,000	89,000	58	8,962	"	"	8,355	607	8,962	46	98	144	19,370
Total....	23,652,000	2,886,441	19,536	1,674,788	10,784	664,197	1,814,460	1,024,525	2,838,985	13,183	26,842	40,025	2,795,791

TABLE II.—INSTITUTIONS OF SECONDARY AND SUPERIOR EDUCATION.

	No.	Professors.	Students.	Outlay.	Bursarships.	Endowments.
UNIVERSITIES.				florins.		florins.
Vienna	1	71	4,718	165,671	256	21,583
Gratz	1	28	876	25,372	47	1,267
Innsbruck	1	24	317	25,053	52	3,593
Prague	1	63	3,341	66,864	55	3,065
Ollmütz	1	26	640	29,525	112	5,600
Lemberg	1	41	1,403	53,593	48	4,480
Pesth	1	....	......	....	....	......
Pavia	1	60	1,316	80,821	24	4,200
Padua	1	40	1,260	98,646	....	......
Total (without Hungary)	9	353	13,871	545,545	594	43,788
LYCEA.						
Salzburg, with Theol., Philos., and Medicine	1	20	212	23,465	7	455
Linz " " " "	1	12	167	12,090	10	302
Laibach " " " "	1	23	299	22,100	39	2,394
Klagenfurth " " "	1	14	171	4,684	26	1,409
Klausenburg " " "	1	14	330	8,810	....	......
	5	83	1,179	71,149	82	4,560
In Hungary, 14*	..	....	......	....	....	......
SEMINARIES FOR DIVINES.						
Vienna (Protestant)	1	5	59	17,007	30	2,400
Redemptorists (for their order)	1	6	8	....	....	......
Admont	1	6	8	....	....	......
Mantern	1	7	9	2,650	....	......
Tarnow Przemysl	2	8	156	4,193	....	......
Lemberg	1	5	31	3,010	....	......
Carlowitz (Greek Church)	1	9	30	4,765	....	......
Zara	1	7	46	15,128	....	......
Hermannstadt (Greek)	1	1	60	180	....	......
In Hungary, 2†	10	54	409	46,933	30	2,400
COLLEGES OF PHILOSOPHY‡	25	166	3,192	127,069	38	2,140
SPECIAL INSTITUTIONS, for boys	31	195	3,508	248,151	163	29,097
SPECIAL INSTITUTIONS, for girls	10	29	429	21,775	21	2,096
GYMNASIA§ (Grammar-Schools), Catholic	116	899	25,458	505,350	446	20,515
GYMNASIA§ (Grammar-Schools), Protestant	14	89	2,451	12,963	13	72
	198	1,378	35,038	915,328	681	53,850
Total cost of the higher establishments for education, without including Hungary	222	1,868	50,497	1,578,955	1,387	104,558

* 2 at Presburg; 2 Raab; 1 Agram, Debreczin, Eperies, Erlau, Grosswardein, Käsmark, Caschau, Oedenburg, Papa, Saros-Patak.

† At Kerestur and Torda.

‡ At Krems, Kremsmunster, Görz, Trent, Budweis, Leitomischl, Pilsen, Brünn, Nikolsburg, Przemysl, Tarnopol, Czernowitz, Zara, Milan, Brescia, Cremona, Mantua, Bergamo, Como, Lodi, Venice, Verona, Udine, Vicenza.
In Hungary, at Stein am Auger and Szeyechin, 2.

§ Hungary has 67 Catholic and 13 Protestant Gymnasia.
The Mining Academy at Schemnitz has 7 Professors, 233 Students: it costs 11,500 florins, and has 55 Burserships endowed with 11,000 florins annually.

TABLE III.—ACADEMIES AND BOARDING-SCHOOLS.

	No.	Professors.	Pupils.		Outlay in florins.	Scholars.			
						Receiving instruction gratis in the house.		Receiving stipends out of the house.	
			In the house.	Out of the house.		No.	Charge.	No.	Charge.
For Boys:—							florins.		florins.
For general education.	98	727	6,652	3,153	1,143,286	2,539	524,292	41	5,958
For Theology	51	189	3,233	1,219	634,172	2,317	460,888	335	21,149
For Military Schools..	40	181	3,457	....	613,332	2,725	450,086	....	....
For Girls	101	612	4,125	586	625,286	2,549	355,204	10	1,310
For both...............	17	99	1,537	3,026	295,166	1,445	167,652	2,373	77,331
Total....	307	1,808	19,004	7,984	3,311,342	11,575	1,957,572	2,759	105,748

TABLE VI.—ACADEMIES OF SCIENCE, LITERATURE, AND THE FINE ARTS, IN 1836.

	No of Establishments.	Directing.	Members.				Total.	Pupils.	Expenditure.	Bursarships.	
			Ordinary.	Honorary.	Corresponding.	Contributing.				No.	Endowment.
Academies of Science and Literature	18	12	1,824	520	607	1,488	3,070	276	59,757	21	3,622
Academies of Fine Arts	6	56	127	204	32	60	460	2,798	92,402	40	2,273
Agricultural Colleges and Unions	11	3	4,343	362	1,004	265	5,945	29	21,946	3	1,781
Museums, &c.	10	62	2,573	405	66	2,302	3,222	704	21,440	12	16
Total..........	45	133	8,867	1,491	1,709	4,115	12,697	3,807	195,545	76	7,692

XII. J. I. VON FELBIGER.

Johann Ignaz von Felbiger was born January 6, 1724, at Grossglogau in Silesia, of Catholic parents, studied theology at Breslau, in 1746 entered the princely foundation of "Regular Canons of the Order of St. Augustine of the Lateran Congregation of our Dear Lady," at Sagan in Silesia, in 1758 became arch-priest of the circle of Sagan, and soon afterwards abbot and prelate of the same.

In this office he had the oversight of the churches and schools of the town, and of a number of villages belonging to it; and his attention was thus directed to the condition of the Catholic school system generally, which the Austrian government had suffered to sink in the charge of the priests and especially of the Jesuits, into a most miserable condition of inactivity and indifference. Parochial common schools were very few, mostly in the towns, and of a very low grade, insomuch that many Catholic parents sent their children to Protestant schools.

Felbiger's first distinct efforts to improve the Catholic schools of Sagan were made about 1761, and were much facilitated by the passage of Silesia under the Prussian dominion, at the peace of Dresden in 1745. But finding himself hopelessly obstructed, for the time, by the incapacity of the teachers, he became readily interested in the efforts then making for the improvement of the schools throughout Prussia, and especially in the annual reports of the Berlin Real School, founded by Hecker in 1739, and with which a teachers' seminary was connected in 1748. In 1763, he visited this school, strictly incognito, and acquainted himself with its scope, organization and methods, and in particular with the "Tabular and Literal Method" of J. F. Hahn, whose systematized mechanical character was well adapted to his views as a partizan of the Jesuit principles of education. On his return from Berlin he at once commenced an active course of labors for the extension and improvement of the common schools; sending young men quietly at his own expense to Berlin for training as teachers; repeating his own visits there; founding normal schools at Sagan, Leubus, Grüssau and Rauden, and afterwards at Breslau, Ratibor and Habelschwerdt; himself laboring as a teacher, issuing a series of school-books and catechisms from a printing establishment of his own, providing for increased salaries to teachers, and generally laboring for a well-regulated school system.

The attention of the Prussian government was attracted by the efforts of Felbiger, and it gladly seized the opportunity of placing so zealous and capable a person at the head of the new school organization for the Catholic portions of the kingdom. In their place he drew up and put into operation the "School Regulations for Roman Catholics in the Duchy of Silesia and County of Glatz," of 3 Nov., 1765; a code which affords a good view of his principles of education.[*] The improvements introduced by Felbiger consisted in promoting better preparation of teachers, the substitution of subjects connected with actual life for mere memorizing, previously used, the introduction of simultaneous instruction, in order to accelerate the progress of the children and to interest them, and in the introduction of tables and other similar systematized collections of matter intended to be learned, as a mode of causing uniformity in subjects and methods of teaching, where previously each teacher had followed his own methods or suggestions. The leading feature in these improvements was the simultaneous method. The tables were a mode of "presenting whatever is to be learned, before the eye, in such an arrangement that the pupil can see whatever is to be learned about any one subject, and also the order in which the parts of such material follow each other." There were two kinds of these; one in which a scheme of stems and branches with braces was used, and another, in which by using the initials of each line, the chief and subordinate divisions of the subject were to be remembered. They were used in the catechism, writing, reading and arithmetic, and included in part definitions and systematized presentations of subjects, in part statements of rules. They were to be written on the blackboard by the teacher, and memorized by the pupils, proper explanations being given. The second kind were used with the "literal method" already mentioned; by writing the initials on the blackboard, and making the children repeat them, as well as the words to which they belonged, until they could repeat the words alone.

In the course of the reorganization of the Austrian government under Maria Theresa, the school system assumed a place as an important object of governmental activity, and was as such taken out of the exclusive control of the clergy. A central school department was organized in 1770, and a normal school established at Vienna. In 1773 the Jesuit order was extinguished, and the comprehensive reformatory plans of the government more fully put in operation. The Prussian government, at the express request of the empress, gave Felbiger permission to enter the Austrian service, and he was appointed "General Director of the School System of the Austrian States," in 1764.

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[*] See Neigebaur, "*Common School System of Prussia,* (*Volksschulwesen in den Preussischen Staaten.*)"

The reforms which he introduced in this new sphere of activity, consisted in the introduction of the features of his system into the three grades of schools that were now established, the use of prescribed text-books and tables, the regulation of summer and winter terms, a systematic division by classes, a very detailed plan of normal lessons, and a thorough official inspection over the system, which it was attempted to render fixed even to stiffness. Felbiger's plans, at first introduced only into Vienna and Austria proper, were received with increasing favor, and were soon extended into the other hereditary states of the empire. Their influence was in fact apparent throughout the whole of Catholic Germany, in an increased interest in the schools.

Felbiger's labors in Austria were too short. In 1778, when the war of the Bavarian succession threatened to break out, he received orders from Friedrich II. either to return to Silesia, or to resign his abbacy at Sagan. Desirous of protecting his favorite enterprise against its adversaries, he chose the latter, and received a compensatory appointment and income from the empress. But after the accession (in 1780) of Joseph II., he was no longer supported by government, and was finally ordered to retire to his deanery at Presburg, and to restrict his attention to the improvement of the Hungarian schools. Here he died, May 17th, 1788.

XIII. PETER FANEUIL.

PETER FANEUIL, who helped to make "giving" a habit among the merchants of Boston, and whose name is associated with the venerable hall which is one of the consecrated places of American Independence, and of the eloquence which did so much to inspire its achievement, was born of a French Huguenot family, in New Rochelle, near New York, in 1700. His ancestors were of La Rochelle, in France; and one or two of the family, one of whom, his uncle Andrew, was a wealthy merchant, removed to Boston, as early as 1691. His mother was named Anne Bureau, and he was the eldest of eleven children. Of his education, and career as a merchant, we have no record; but that he was successful, liberal, and respected is still witnessed by his own benefaction, and by the records of the action of the town.

What suggested to his mind the idea of presenting the town with Faneuil Hall is not known. There had been a controversy of some years' standing in Boston, respecting the expediency of public market-houses, which had, in 1733, been once established, but soon went into disuse. The party in favor of a public market not being able to carry a vote to erect one, Mr. Faneuil liberally offered, during the summer of 1730, to build one at his own expense, and to present it to the town. A petition was laid before the town to accept Mr. Faneuil's proposal, and was carried by a majority of only seven, out of a total vote of 727. The hostility thus indicated was, however, not against Mr. Faneuil, for a vote of thanks to him at the same meeting was unanimous; but against the principle of a public market. Indeed, the petition would probably have been refused, had it not specified that market-people might, if they chose, sell their wares about the streets, as before.

The building was finished in about two years, including, beyond the first design, the public hall over the market, and several other rooms. It stood where the present building does, and was a handsome edifice of brick, 100 by 40 feet.

Mr. Faneuil died on the 3d of March, 1743, about six months after his hall was completed, aged only forty-two years and about nine months.

The first meeting held in his hall was that at his own funeral; Rev. Charles Chauncy opening with prayer, and John Lovell, Master of the South Grammar School, then delivering the funeral oration.

FUNERAL ORATION, ON PETER FANEUIL, ESQ.

Delivered at Faneuil Hall, March 14*th*, 1742; *being the first meeting of the Inhabitants of Boston, in that place.*

BY JOHN LOVELL, A. M.

I STAND in this place, my fellow townsmen, and my worthy patrons, at the call of those to whom you have committed the direction of your public affairs, to condole with you for the loss of your late generous benefactor, the founder of this house. Certain I am, there are numbers in this great assembly, who could upon this occasion have done more justice to his memory, and have better discharged the office that is enjoined me. But the commands of those (for such I must always esteem their desires,) who have devolved this charge upon me, and the veneration I have for the virtues of the deceased, oblige me to bear what little part I can, in a grateful acknowledgment of the just regard due to the memory of a man, whose name, I am sure, will never be forgotten among us.

How soon, alas! is our joy for having found such a benefactor, changed into mourning for the loss of him! But a few months are passed, since we were framing votes, and consulting the best measures to express our gratitude for his unexampled favors; and the first annual meeting within these walls, that were raised by his bounty, finds us assembled in the deepest sorrow for his decease.

Instances of mortality are never more affecting than in those whose lives have been public blessings. Surely then, every breast must feel a more than common distress, for the loss of one, whose largeness of heart equaled, great as it was, his power to do good. Honest industry must mourn, for which the exercise of his bounty found an almost constant employment; and they that know how to pity the calamities of human nature themselves, will mourn for him that always relieved them.

So soon as he arrived to the possession of his large and plentiful estate; instead of fruitlessly hoarding up his treasures, though no man managed his affairs with greater prudence and industry; instead of wasting them in luxury, though plenty always crowned his board; instead of neglecting the wants of his fellow creatures, an unhappy circumstance too often attending the possession of riches; he made it manifest that he understood the true improvement of wealth, and was determined to pursue it. It was to him the highest enjoyment of riches, to relieve the wants of the needy, from which he was himself exempted, to see mankind rejoicing in the fruits of his bounty, and to feel that divine satisfaction which results from communicating happiness to others. His acts of charity were so secret and unbounded, that none but they who were the objects of it, can compute the sums which he annually distributed among them. His alms flowed like a fruitful river, that diffuses its streams through a whole country. He fed the hungry, and he clothed the naked; he comforted the fatherless and the widows, in their affliction; and his bounties visited the prisoner. So that Almighty God, in giving riches to this man, seems to have scattered blessings all abroad among the people.

But these private charities were not the only effects of his public spirit; which, not contented with distributing his benefactions to private families, extended them to the whole community. Let this stately edifice which bears his name witness for him, what sums he expended in public munificence. This building, erected by him at an immense charge, for the convenience and ornament of the town, is incomparably the greatest benefaction ever yet know to our western shore. Yet this effect of his bounty, however great, is but the first fruits of his generosity, a pledge of what his heart, always divising liberal things, would have done for us, had his life been spared. It is an unspeakable loss to the town, that he was taken away in the midst of his days, and in so sudden a manner, as to prevent his making provision for what his generous heart might design. For I am well assured, from those who were acquainted with his purposes, that he had many more blessings in store for us, had heaven prolonged his days.

But he is gone! The town's benefactor, the comforter of the distressed, and the poor man's friend.

He is gone! And all his plans of future bounties with him; they are buried in the grave together. He shall be raised to life again; and his intended charities, though they are lost to us, will not be lost to him. Designs of goodness and mercy, prevented as these were, will meet with the reward of actions.

He is gone! And must such men die! die in the midst of their days! Must the protectors and fathers of the distressed be taken away, while their oppressors are continued, and increase in power! Great God! How unsearchable are thy ways! We confess our sins, but just and righteous art thou.

To express your gratitude to your generous benefactor, you have passed the most honorable resolves, and to preserve his memory, you have called this house by his name. But in vain, alas! would you perpetuate his memory by such frail materials! These walls, the present monuments of his fame, shall molder into dust; these foundations, however deeply laid, shall be forgotten. But his deeds, his charities, shall survive the ruin of nature. And to have relieved the miseries of the distressed, to have stilled the cries of orphans, and to have dryed the widow's tears, are acts that shall embalm his memory for many generations on earth, and shall follow him beyond the limits of mortality, into those blissful regions where endless charity dwells.

What now remains, but my ardent witness (in which I know you will all concur with me,) that this hall may be ever sacred to the interests of truth, of justice, of loyalty, of honor, of liberty. May no private views nor party broils ever enter within these walls: but may the same public spirit that glowed in the breast of the generous founder, influence all your debates, that society may reap the benefit of them.

May liberty always spread its joyful wings over this place: liberty that opens men's hearts to beneficence, and gives the relish to those who enjoy the effects of it. And may loyalty to a king, under whom we enjoy this liberty, ever remain our character. A character always justly due to this land, and of which our enemies have in vain attempted to rob us.

May those who are the inheritors of the large estate of our deceased benefactor, inherit likewise the largeness of his soul. May the widow, the orphan, and the helpless, find in them a protector, a father, and a support. In a word, to sum up all, may FANEUIL live in them.

May charity, that most excellent of graces, that beam from the breast of the Father of Mercies, which, so soon as ever it enters our bosoms it begins our happiness; charity, the joy of men, of angels, of Almighty God; which completes the felicity of earth and heaven; may it warm the hearts of those who are like to our departed friend in their fortunes, to resemble him too in his bounties: may there be raised up some new benefactors in the room of him we have lost, who shall, if possible, rival Faneuil's spirit. And may there always remain in this town, the same grateful sentiments, the same virtuous dispositions, to remember their benefactors with honor.

XIV. EDUCATIONAL AND OTHER BENEFACTIONS IN BOSTON, MASS.

(Continued from Vol. VIII., p. 628.)

We continue in this number of the Journal the statistics of the public and private charities of Boston, from an article on the subject in the last (July, 1860) "*North American Review*—by the same hand, we presume, Hon. Samuel A. Eliot.

It would not be difficult to show that a wise and refined beneficence produces fruits of direct utility which the most cunning selfishness could not reach; and therefore that charity, in all its forms, is an agent and a producer of good in a much larger proportion than selfishness. Does not a hospital restore the health and strength of many a poor man, who saves his family from becoming a burden on society? Is not many a child rendered a producer, instead of a mere consumer, by the asylums, the Sunday schools, and the day and evening schools, that are supported by public contribution and private charity? If the industrial and productive effect of many of the institutions called charities were capable of being seen and known, would they not be proved to be a remunerative expenditure?—remunerative, we mean, not to the individual founder or benefactor, for in that case there could be no charity, but to the community in which they exist. This view makes every founder and supporter of a useful scheme of benevolence a public as well as a private benefactor, and adds dignity as well as utility to his labors or his gifts. In a country like this, growing every day in wants as well as in means,—all classes of society, the rich, the poor, and every variety of the one and the other, increasing each day,—institutions of charity must increase with equal growth, and must multiply with the multiplying employments and wants of the population, or else great numbers will be left without resource in the worst calamities and most distressing circumstances of life. Large portions of the community are found in a new condition in every succeeding generation; foundations which were well adapted to their times are, at later periods, either inadequate or comparatively useless; and the charitable as well as other institutions must be modified, or new ones must be created, to meet the wants of each successive age. It is with great satisfaction, therefore, that we observe in our present list so many associations, whose names and objects are new; which have, indeed, begun to exist since 1845, and which show, or tend at least to show, that the resources upon which public spirit may draw are neither hoarded nor exhausted. The old institutions are kept up, and new ones are formed, very generally by voluntary contribution; in a few instances only, by permanent funds; and thus successive generations meet new occasions, without forgetting the perpetual wants of society.

There is one contribution for the general benefit, which, as it comes in the shape of a tax, may not be considered as charity; but the spirit, the essence of charity is in it, and it is in fact principally a contribution by the richer classes for the benefit of all; namely, the school tax, which is larger or smaller in every town, according to the liberality with which the inhabitants provide for the public schools which by law they are obliged to maintain. In Boston it would be thought little to comply with the bare letter of the law. The schools are sustained with a liberality, and a judicious abundance, both in number and in apparatus, which show a spirit quite beyond that of the mere law, for providing adequate instruction for all, and compelling all to avail themselves of it. There are, unhappily, some parents, who are so little aware of the advantage of having their children attend school, and acquire the elements of knowledge, as to render compulsion necessary to bring the young within reach of instruction; and there are officers employed by the city to gather vagrant children to the schools to which they properly belong, and to put them in the way, at least, of learning something better than the instructions of the street. For the fifteen years last past, the average expense of the public schools has amounted to $324,263.15 per annum, of which the sum of $164,620.97 has been the annual cost of the grammar schools, $83,437.35 of the primary schools, and $76,204.83 of the various school-houses, making a total amount of $4,863,947.28 within the period named.

There is another kind of city expenditure which approaches more nearly to the character of charity,—a provision for those who are absolutely destitute of ability and of means for self-support. This includes the inmates of the House of Industry, and the Lunatic Hospital maintained by the city, the former of which has, within fifteen years, required for its support $781,150, and the latter $84,841.32. Besides these sums the Overseers of the Poor have distributed to those who need a partial support in their own houses, the amount of $441,568.77; and the city has also been charged with the sum of $13,043.03 for the support of paupers in the State Lunatic Hospital, making a total amount of $1,320,603.12 spent in what may be called the corporate charity of the city. The sums distributed in this manner have increased of late years with great and unexampled rapidity, from causes which we can not search out, but are content to leave in the competent hands of the government. Thus the expense of the House of Industry was $13,514.02 in the year 1845; in 1850 it had risen to $61,868.67; in 1855 it was $58,786.93; and in 1859 it was $77,817.95. The Overseers of the Poor also in 1845 expended $7,655.19; in 1850, $21,761; in 1855, $37,314.89; and in 1859, $55,277.74.

The average contributions of twenty-five parishes in the city to various objects of benevolence, left at the discretion of the minister, or a committee, is $582.14, which would make an aggregate for the whole number (about a hundred) of $58,214 per annum for the fifteen years of which we are rendering an account. Of this the whole is devoted to the purposes of several of the societies enumerated in our list, especially missionary societies: and a further sum is raised for the specific charities of the parishes to the poor within their own limits. As nearly as we can judge from various considerations, we are disposed to estimate the average expense for these parish charities at $150 each. This would make $15,000 a year for the hundred parishes of the city.

A favorite mode of administering to the wants of the poor, as well mental and spiritual as physical, is through the agency of missionaries, either self-appointed, or delegated by others. The rills of charity flow through many such channels; but it is not possible, nor perhaps desirable, to know the precise extent to which distribution of material aid and of spiritual encouragement and comfort is effected in this manner. After all that is, or can be, done by institutions and establishments created by combined resources, there must always be an abundance of cases necessarily left to individual care. To these is to be applied our Saviour's injunction, "Let not thy left hand know what thy right hand doeth;" and we rejoice to be quite sure in some instances, and to believe in many more, in which the rule has been strictly and faithfully obeyed. The extent of this carefully concealed benevolence can not be known of course.

CONTRIBUTIONS FROM JANUARY 1, 1845, TO JANUARY 1, 1860.

For Religious Objects.

	Society for Propagating the Gospel among the Indians and others in North America,	. . . . . .	$13,607.07
	Massachusetts Society for Promoting Christian Knowledge,		15,698.18
1853.	Southern Aid Society,	. . . .	55,842.48
	City Missionary Society,	. . . .	124,212.49
	American Tract Society,	. . . .	55,258.00
	" Board of Commissioners for Foreign Missions,		322,045.15
	Amount carried over,		$586,663.37

Amount brought over,	586,663.37
American Home Missionary Society,	95,084.67
“ Baptist Missionary Union,	85,000.00
Foreign and Domestic Missions (Episcopal Church,)	80,351,00
Episcopal City Mission,	14,270.00
E. B. Society,	31,000.00
Massachusetts Convention of Congregational Clergymen,	1,000.00
Episcopal Diocesan Missions,	13,500.00
American Education Society,	28,554.71
St. Mary's Free Church for Sailors,	16,000.00
Benevolent Fraternity of Churches,	102,571.80
Methodist Episcopal Church, for foreign missions and church building,	216,701.16
	$1,220,726.71

For Charitable Objects.

	Massachusetts General Hospital and Asylum for the Insane,	$357,530.50
	“ Eye and Ear Infirmary,	46,518.75
1851.	“ School for Idiotic and Feeble-Minded Youth,	78,680.00
	“ Temperance Society,	6,000.00
1857.	“ Medical Benevolent Society,	1,673.00
	Boston Dispensary,	85,253.75
	“ Female Asylum,	30,267.11
	“ Port Society,	38,598.00
	“ Marine Society,	11,300.00
	“ Children's Friend Society,	53,597.72
1849.	Association for Relief of Aged and Indigent Females,	117,373.93
1847.	Temporary Home for the Destitute,	85,955.53
	Penitent Female Refuge,	25,638.13
	Needlewoman's Friend Society,	3,031.00
	Old South Quarterly Lecture,	16,857.60
	Howard Benevolent Society,	65,902.05
	Widow's Society,	12,741.35
	Fragment Society,	1,764.75
	Seaman's Friend Society, and Sailor's Home,	34,334.96
	“ Aid Society,	30,957.00
	Sailor's Snug Harbor,	65,000.00
1849.	Society for Relief of Aged and Indigent Ministers,	18,158.00
	St. Stephen's Mission to the Poor,	46,421.00
1849.	St. Stephen's Brotherhood,	3,545.00
	Society for the prevention of Pauperism,	21,416.65
1847.	German Aid Society,	*2,767.24
1855.	Church Home for Orphan and Destitute Children,	21,037.91
	Warren Street Chapel,	75,000.00
	“ “ for rebuilding,	5,000.00
1852.	Provident Institution, (Franklin Street,)	†71,745.26
	Charitable Association of Boston Fire Department,	5,460.17
1858.	Channing Home,	3,469.44
1856.	House of the Angel Guardian,	28,669.00
	Colonization Society,	23,060.99
1849.	Children's Mission to the Children of the Destitute,	21,935.00
	Charitable Orthopedic Institution,	1,500.00
	Charitable Irish Society,	3,353.00
	Methodist Episcopal Church,	61,182.64
		$1,482,726.43

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* Estimates of receipts of German Aid Society, previous to 1845, $4,000.

† Twenty per cent. may be added for clothing sent in by dealers in suitable articles.

For Purposes of Education.

1857.	Boston Public Library, cost,	363,633.83
	" " " donations,	74,100.00
	" Athenæum, donations,	65,000.00
	" " subscription to new shares,	158,362.07
	Harvard College,	706,333.96
1858.	Museum of Natural History, at Cambridge,	75,000.00
	Trustees of Donations for Education in Liberia,	33,781.50
1855.	Massachusetts Institution for Girls, at Lancaster,	19,875.00
	Perkins Institution for the Blind,	66,301.00
	Boston Asylum and Farm School,	68,064.79
	American Academy of Arts and Sciences,	11,500.00
1846.	State Reform School,	73,500.00
1853.	Industrial School for Girls,	18,000.00
1852.	Tufts College,	100,000.00
	Latin School,	4,500.00
1851.	School of Design,	8,000.00
	Massachusetts Historical Society,	*34,075.00
	Mechanic Apprentices' Library Association,	2,091.9[illegible]
	Methodist Episcopal Church,	173,590.36
		$2,055,709.66

For Monuments.

1852–9.	Washington Memorial, by Mr. Everett,	†$70,000.00
1854–6.	" " Mrs. Otis,	6,000.00
1856.	Statue of Franklin,	20,000.00
1853.	" Webster,	24,550.50
1859.	" Rev. Hosea Ballou, collected in Boston,	1,734.00
1850–60.	Statues at Mount Auburn,	21,000.00
1859.	Copley's Picture of Charles I. in the House of Commons,	7,500.00
1851.	Healy's Picture of Webster in the Senate of the United States,	5,000.00
1858,	Arcadian Boy, by Story, in City Library,	1,500.00
1856.	Plymouth Monument by Billings, subscribed in Boston,	11,500.00
		$168,784.50

Miscellaneous.

1847–8.	Contribution for Ireland, during famine,	$52,162.02
1859.	Model Lodging-Houses, (by an individual,)	50,000.00
1858.	Contribution for Fayal, during famine,	9,800.00
	Annuities since 1845,	64,000.00
1847.	Contribution for Nantucket, after fire,	18,124.81
	Prison Discipline Society, in ten years,	18,000.00
		$212,086.83

Recapitulation.

For Religious Objects,	$1,220,726.71
" Charitable Purposes,	1,482,726.48
" Education,	2,055,709.46
" Monuments,	568,784.50
" Miscellaneous,	212,086.83
	$5,140,033.93

There is a view to be taken of the relative amount of the charities enumerated, and the public objects promoted, in the preceding catalogue, to the property taxed in the city (generally supposed to be below the amount actually possessed,) which is well adapted to diminish any feeling of exultation or self-approbation into which we may be betrayed by the survey of the considerable aggregates we have enumerated. The valuation on which taxes were assessed in 1845 was $135,948,700. In 1859 it was $263,429,000. The mean would be about $200,000,000, the lowest probable income of which is from ten to twelve millions annually. The sum of the amounts expended for the public objects enumerated above is about $5,140,000; but calling it $5,300,000, to make full allowance for anything omitted or unknown, the average is $353,333 per annum, which would leave from $9,646,000 to $11,646,000 for expenditure and reinvestment. Whatever allowance may be made for error or miscalculation, in this estimate of income, enough will remain to show that the donations in charity, or for great and permanent objects, are not of an amount that need cause any alarm for the permanent decrease of our resources from extravagance in this luxury; but that as long as the property of the city doubles in about fifteen years, its charities should also double, in order to maintain the ancient reputation.

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* Previous to 1845, $5,300.

† Collected in various parts of the United States, by the labors of a Boston patriot and scholar.

In our advance as a people in age, population, and resources, the physical wants and calamities of life are not likely to be neglected among us. They are obvious to the eye, and of a nature adapted to awaken, in every feeling heart, a strong and active sympathy. There is no reason to apprehend that they will ever be forgotten or neglected. We wish it were so with the interest of that vitally important concern of life, education. We have reached that condition of society, in which the value of elementary instruction is universally perceived and acknowledged; and we feel every day the immense advantage which the spread of knowledge so far in our community has given us, in the character, the ambition, and the success of our population over those of any equal number without similar privileges. But we have not yet attained an adequate sense of the extent to which instruction is a benefit. We are too apt to think that the common school is all we want,—that it is glory enough for us, in the way of education, to have made its elements universal: and it is a matter of boasting that every person in New England can read. But of what use would be the power of reading, if no opportunity were furnished of usefully exercising the power, by the perusal of books containing the last and best results of study and research? We must have among us minds cultivated to the necessary point of furnishing the best books and materials for study, or we must be ingloriously dependent upon other nations for all progress, and even for preventing a retrograde movement. We must be advancing or retreating: and in this country, with such entire security from foreign interference, and such rapid accumulation of material wealth, there is nothing wanting for progress but the perception of what is necessary, and the willingness to devote the appropriate pecuniary resources to its attainment. Of the latter there is obviously an abundant supply. The moment it is perceived that any particular object is desirable, the means are readily and eagerly furnished by men of mental and pecuniary ability. The great difficulty is to persuade them that any particular study or acquisition is necessary; and we do not wonder at the existence of the difficulty, so long as all that was thought important was the knowledge of the past, without much reference to the present and the future. But the relative value of particular studies is much changed. The past history and languages of men and nations are not the only attainments which are now to be mastered by the scholar. The laws of mind and of matter are to be investigated, with a thoroughness and precision which have not heretofore been reached, nor even sought. The planet upon which we live is full of subjects upon which men are still profoundly ignorant, and the investigation of which will well employ, for ages to come, the limited number who are able, from their organization and circumstances, to pursue such studies. Those, however, who are best fitted by organization and circumstances for the more recondite pursuits of science, philosophy, religion, and law, need a preliminary instruction in a variety of branches of knowledge, for which colleges and universities are the appropriate institutions. The young man must be carefully trained, as far as training can carry him, if he is to be expected to advance beyond his predecessors in the career of knowledge. Discoveries in the external world are not made by accident, so much as by the application of mind to the circumstances around us; and mind, in order to be productive, must be cultivated. Nor can its own laws be investigated by those who are not versed in all that has yet been ascertained with regard to the intellectual and immortal part of human nature. If, then, either mind or matter is to be intelligently studied, we must have something more than the common school, which simply gives the first means of progress, and of appreciating, perhaps, the greater advancement of the higher order of minds. The grammar-school is indispensable, but so much more are the college, the university, the professional and the scientific school. We rejoice to perceive, in the foregoing catalogue, some evidence that this truth is beginning to be acknowledged in our community; and that a larger proportion than heretofore of the wealth distributed both by the public and by private persons, has been devoted to our highest educational institution. The very considerable sums given by the Legislature and by individuals to Harvard College, the greater part of which are for well-considered and most important objects, are valuable evidence of the general progress of ideas upon the subject of education. But they must be still further extended, before the wants of the age, and of all ages, are seen and supplied; and when this is done, there must be one thing more accomplished, and that is a change in the comparative estimation by the public of scientific and political reputation. When it is seen, as one would think it must be seen, sooner or later, that political advancement, in this country, does not imply, as it has done in other times and nations, great power over the relations of society, and much less over individual members of society, the exclusive ambition for political distinction, which is a sort of contagious mania among us, must subside; and other objects, such as science, theology, and law, must share, at least to a greater extent than heretofore, the devotion of aspiring minds. Power, we know, will always be the object of ambition; but, we trust, not necessarily nor exclusively political power. In this country, already, the possession of political power means a very different thing from what it means on the Continent of Europe, or even in England. The material rewards are much less dazzling, and much less really important; and it would be by no means surprising, if such a revolution of ideas should take place, that men should consider political office an encumbrance and a burden, to be avoided by almost any sacrifice. Municipal offices are so regarded, at this hour, in some cities of Germany, and men who are elected, or whose turn has come to undertake the toils of office, are subjected to heavy and almost ruinous fines, if they refuse the proffered honor and labor.

But, without contemplating so remote and so vast a change of ideas and feelings, we can imagine the claims of knowledge to be more widely admitted than they are at present. This is nothing more nor less than believing in the progress of civilization; and that depends upon many other things besides political institutions. Nobody can be more free, or less happy, in social relations, than a North American Indian. In the absence of external control, which constitutes what is commonly understood by freedom, self-control becomes more and more important; and self-control is one of the last and best results of the highest religious, moral, and intellectual cultivation. Upon the extension of personal self-control, as a principle to guide our public and private conduct, depends the success not only of individuals, but of nations, in the career of humanity; and whoever desires to see the institutions and the liberty of the country preserved must desire the progress of education in every department, until all the powers of the human mind shall be so appropriately and adequately cultivated, as to make them subservient to a virtuous will. It is to intellectual culture in all departments of mind, therefore, that we desire to call the attention of the philanthropic among us, most particularly in the present state of our institutions and our charities. It would seem that all other departments to which liberality may be called to extend its benefactions are now more or less faithfully provided for. Elementary education, physical suffering, poverty, old age, and mental infirmity, are all furnished with the means of supply or relief. Vast sums are annually sent abroad for the religious instruction of those who are not yet in a condition to be benefited by it; while the proper and sufficient collegiate education of our own young men, for our own wants, is not adequately provided for. It is on all accounts desirable that our colleges should be better furnished with pecuniary resources in almost every department of learning. Scarcely a professor can be found who is properly supplied with the means of comfort, nor an institution of the class referred to, with the libraries and collections necessary for adequate instruction in this day of progress. It is at once gratifying and humbling to witness the eagerness with which young men crowd to institutions, which, however imperfect, are yet the best that can be found in the country; how fully appreciated and how eagerly used are the means of progress which are supplied; and ample guaranty is thus given that increased advantages would be neither neglected nor misused. We shall deem no labor lost which shall tend in any degree to arouse the community of our age and nation to a sense of the importance of affording to all who seek it the means of the most thorough and accurate instruction in every branch of human knowledge. By this process we shall not only raise the standard and increase the product of intellectual studies and pursuits, but we shall secure for all future time the great charities, and the religious and literary institutions, which are the protection, the ornament, and the glory of nations.

XV. MUSEUM OF COMPARATIVE ZOÖLOGY.

The establishment of a Museum of Comparative Zoölogy, in Cambridge, Mass., in connection with Harvard College, and by the combined liberality of the State, the College, and individuals, under the auspices and with the results sets forth in the following extracts from the Proceedings at the Dedication of the building to the purposes of the Museum, on the 13th of November, 1860, is the great event in the educational history of the year.

THE MUSEUM AND ITS ARRANGEMENTS.

The handsome edifice, which is but the beginning of the large and splendid museum contemplated, and comprises a little more than one-tenth of it, is situated on Divinity Avenue, opposite Divinity Hall. The lot of land on which it stands is an oblong square of about five acres, given by the university, in trust, to the museum. The building which it is contemplated to erect will represent three sides of a rectangle with an open square facing Divinity Hall. Its dimensions will be as follows:—The main part 360 feet in length, two wings 200 feet in length, each; making an entire length of 760 feet, and having a uniform width of 60 feet. The building already erected is the beginning of the north wing nearest to Divinity Hall, and measures 80 by 60 feet. It is, apparently, four stories in hight; but the second rows of windows belong to the large and commodious galleries which surround the rooms. On each floor are four rooms of equal size, measuring each 30 by 40 feet. The rooms are fitted with cases made with the utmost care and nicety of finish, and of a pattern which the long experience of Professor Agassiz has proved to be the best in use. So accurately made are they, that a shelf from any one cabinet will exactly fit any other cabinet in the building. Entering the building from the north side the lower room on the left—the south-east room—is the students' laboratory, the room specially used by the students of the Zoölogical department of the Lawrence Scientific School. The south-west room is the lecture-room of the museum, where not only students of the Scientific school, but teachers of the state, can avail themselves of Professor Agassiz's valuable instruction. It is very gratifying, says Professor Agassiz, to see the interest manifested by the teachers in these lectures. Over one hundred teachers, including sixty or seventy ladies, attended the lecture of last Wednesday, and on Saturdays the number is much larger. The north-west room belongs to the assistants in the building; it is here that specimens are opened and arranged for exhibition or preservation, so that the aspect of this apartment is continually changing, owing to the reception and disposal of many hundred specimens daily. The north-east room is Professor Agassiz's private laboratory, and the galleries above are to be devoted to his library. The remaining galleries on this floor are used as workshops and sorting-rooms, excepting that of the lecture-room; which is devoted exclusively to sea-urchins and star-fishes. Passing into the second story we see, carefully arranged, all those splendid specimens which have been the result of so much patient research, and in which Professor Agassiz may take a just pride. The south-west room of the second story is devoted to corals, arranged according to the locality of the species. A splendid collection, the "Polyp Fauna of Florida and the Gulf of Mexico," occupies the case on the north side of the room. The south-east room and its galleries are occupied by molluscs, &c. Here is a case of "Jurassic Cephalopods," and a large variety of other specimens. One peculiar feature of arrangement whereby the study of specimens is facilitated, is the use of colored boxes to represent different geological periods. Thus, blue boxes contain the jurassic; green, the cretaceous; orange, the devonian, &c. In this room the main part is assigned for the univalves, and the galleries for the bivalves. In the north-east room are articulates;—insects, crustacea and worms; the insects being below and the crustacea in the gallery above. The insects are kept in air-tight boxes, from which the light is excluded. But the plan proposed is to have them arranged in glass-covered boxes. The north-west room is devoted to fossil vertebrates. The galleries of this room are filled with fossil fish placed in this proximity to the specimens below in order to compare the different specimens.

The attic contains an immense number of specimens, unarranged; such specimens being stored as are required to be kept in a dry state. The basement is used for the reception of articles and the storage of alcoholic specimens, or such as are required to be kept in a moist state. Here are stored a collection of fishes—numbering about 47,000 specimens, &c. The arrangement of the fishes will involve an outlay of about $12,000 for alcohol, jars, &c. Yet it is to be hoped that this sum may soon be raised to place upon the shelves of the museum a collection which stands *third* in the world. Its superiors are the collection in the Jardin des Plantes at Paris, which numbers 5,000 different species, and that in the British museum which has less than 4,000 species, while our museum has upwards of 3,500 species.

This is a noble beginning of what is destined to be the most magnificent collection in the world.

In the presence of the authorities of the University and the Commonwealth, and of a large concourse of friends of science and learning, the keys of the Museum were delivered by Dr. Bigelow, Chairman of the Building Committee, to Governor Banks, as President of the Trustees, to whom the care of the museum is committed by Act of the Legislature of Massachusetts, with appropriate remarks; the most important of which, in our opinion, is this—that "a building sufficient to the present need of the institution has been created for a sum which is less than the estimated cost, and less than the sum actually appropriated by the Trustees." On receiving the keys, Gov. Banks expressed the satisfaction of the Trustees with the work, and ex-President Walker invoked the divine blessing on the enterprise which was to be carried on within its walls. Addresses were then made by President Felton, Professor Agassiz, and Governor Banks. From these admirable addresses we make such extracts as will exhibit the history and aims of the founders of the institution.

PRESIDENT FELTON.

The members of our university justly consider the founding of such a museum as a great event in the history of Harvard. No doubt it will increase the means of intellectual cultivation enjoyed by the university, to a large extent, and in a department of the highest interest and importance. They rejoice in its achievement, not only for this reason, but chiefly on account of its larger relations to the Commonwealth and to mankind. They see in it a means of drawing hither ardent and aspiring youth, fired with the sacred love of nature, who shall in due time go forth bearing with them over the land the lights of science. They see in it the means, under the noble provisions of the law, of acting directly upon the public and popular instruction of the state, by opening its priceless treasures, and the living lessons of master minds—present and future—to the great body of Massachusetts teachers, men and women. They see in it the means of adding day by day, to the sum total of the world's known truths. It is because they take this broad view of the blessings such an establishment may diffuse, and because they know that its efficiency will be greater, if connected with the university, than it could be in an isolated condition, that the corporation of Harvard College, under the presidency of my predecessor, and with his wise approbation and vigorous support, readily joined with the liberal private citizens, and the enlightened authorities of the state, in producing this brilliant result. By such means, and under such circumstances, our museum has sprung into being. Its benefits are already beginning to be felt at home; and it has excited the admiration of the wisest men from abroad. Though but a small part of the whole scheme has been as yet carried into effect, it enjoys the inestimable advantage of having its foundations laid according to the most comprehensive principles, embodying the last results of science. The building has been planned and constructed, after mature consideration of every point, with the strictest reference to its objects and use, by the most distinguished architectural skill. In arrangement and classification, in the facilities afforded for study and practical use, nothing is wanting which in the present state of science can be supplied.

A Museum of Comparative Zoölogy is a chapter in the history of Creation. The university was consecrated in the beginning to the truth, as the highest aim of education. Science, letters, art, Christian morals and manners, come within the generous scope of the founders, and the noble array of benefactors, who have built it up to its present hight of usefulness and renown. The laws of nature and the forms of life, no less than the messages of prophets and the evangels of apostles, are revelations of God, to be reverently studied by man.

An administration of the government of Massachusetts, honorably distinguished by its steady support of public education and the advancement of science, is soon to close. Many of the objects of ambition, most eagerly sought, are ephemeral when gained, yielding only the triumph of a day: but the triumphs of truth are permanent. Science is not of one age or one country: it is coeval with eternity, and coextensive with the universe. He whose fame is identified with its advancement, has won a "possession forever."

ADDRESS OF PROF. AGASSIZ.

When I came to this country in 1846, I had no thought of staying here. I had come upon an invitation of Mr. John A. Lowell, to deliver a course of lectures before the Lowell Institute. I had taken leave for a year and a half from the college of Neuchatel, with which I was then connected, and it had pleased the King of Prussia, at that time Prince of Neuchatel, to grant me the means for a scientific exploration of some parts of this continent. I had not been much more than a year here, when the convulsions which disturbed Europe, led me to consider seriously how far it would be advisable for me to return to my native country, or to prolong my stay in America.

While I was hesitating, the late Honorable Abbott Lawrence one day called upon me, and explained to me confidentially his plans respecting the foundation of a Scientific School in Cambridge, stating that it would be an additional reason for him immediately to carry out his intention, if I should accept a professorship in that school. I did not feel at liberty to decide before having obtained a regular discharge from the College with which I had been connected for fifteen years. This was, however, granted in the most considerate manner, and in the spring term of 1848, I entered upon my duties as professor of the scientific school—a post which I still hold.

One of the most tempting inducements I had for staying in America was the offer made me by the superintendent of the United States coast survey, to avail myself of the facilities afforded by the different parties carrying on the work of the survey, to visit in person the coast and collect the animals living along our shores, with most accurate indications respecting the nature of the bottom on which they are found, the depth at which they occur, and other information for which naturalists sigh, without having frequent means of obtaining them. To these facilities I owe part of the most valuable information I have been able to obtain in my life.

Placed as I was, at the head of a new department of public education, I had now to make the necessary collections for my instruction, as none existed in the university; and during my vacations I visited successively, for that purpose, our southern and western states, delivering lectures on my way to defray the expenses necessary to make extensive collections, which to me were very heavy, as I never had any thing but what I earn from year to year.

In 1852 the treasurer of Harvard College obtained by private subscription the sum of $12,000, amounting to the expenses I had thus far incurred, to secure as property for the university the collections I had brought together. With these new means at my command, and some additions, obtained in the same way as in former years, I have gone on enlarging the collection until, by a succession of fortunate circumstances, a movement was started to found a public museum.

Nearly two years ago Mr. William Gray presented to our university the sum of $50,000, left by his uncle, the late Hon. Francis C. Gray, to found a Museum of Comparative Zoölogy, without determining the institution to which it should be granted, but leaving to his executor the final disposition of his generous bequest. With such a basis of operations it was at once plain that the usefulness of the museum of the university should be extended beyond what had been thus far contemplated, and that perhaps a great establishment might be founded, if the public in general could be interested in it. With this impression, a committee of gentlemen was formed at the suggestion of the committee annually appointed to examine the condition of the scientific school, and in a surprisingly short time, the sum of $75,000 was raised by private contributions, with the view of erecting a suitable building to receive and preserve the collections then on hand.

A magnificent grant of $100,000 was also made by the legislature, in accordance with a recommendation of His Excellency, Gov. Banks, in his message to the general court. The nascent institution was thus endowed with $225,000, and it became necessary to organize a permanent body to administer its affairs. A law was passed to that effect by the legislature, in the summer session of 1859, and an agreement having been entered upon with the corporation of the university, the college ceded to the board of trustees, their collections and a piece of land of about five acres upon which to erect the building of the museum, reserving to the professor of zoölogy and geology, the administration of the collections under the direction of a special faculty, while the whole became public property as an independent institution under the direction of the board of trustees.

Committees were at once organized to carry out the plans for the erection of a suitable building and the general arrangement of the museum.

The most important point now was to adopt such a plan for the building as should, in every respect, answer its purpose, and it is highly gratifying to me to be able to say that I have found in the building committee, gentlemen ready to exert themselves in every way in order to carry out the objects of such an edifice, even to yield their own preferences in consideration of certain requirements of a scientific establishment, which are not easily combined with architectural conceptions. For years past I had been turning over in my mind a general plan for a great museum, and have been aided in my attempts, by the skill of my friend, Mr. Greenough, who finally devised a plan which appeared to me entirely unobjectional; so that when the time for action came, the plans were ready for consideration, and required only to be worked up for execution.

This was admirably done by Mr. Snell, and the building, as it stands, is the result of these combined efforts. But the skillful management, in consequence of which the appropriation for its erection was not exceeded, is entirely to be ascribed to the zeal and activity of the building committee. I need hardly add, that a part only of the general plan has thus far been carried out, and that as the portion now erected is only a part of a wing, room is left for any architectural embellishment which the future may render desirable.

The committee of the museum had another and important office, that of regulating the expenditures concerning the collections. To this recommendation I owe it that I was allowed to make important additions to the museum, during my late visit to Europe, among which the most valuable is the purchase of the collections of fossils of Professor Braun in Heidelberg, by which we have received the first series of specimens with authoritative labels, bringing with them part of the tradition of our science to our new establishment.

While the builing was erecting, and many years before, as far as the insufficient accommodations I had, would allow, the specimens which were accumulating from every quarter of the globe, were undergoing a careful examination and submitted to a critical identification with the view of having them ready for exhibition, as soon as circumstances would permit. The arrangement of many hundred thousands of specimens was no easy task. In fact, I could never have undertaken it alone. But I had, as professor, to train young men intending to be professional naturalists, and I availed myself of this circumstance to advance the work of the museum, by adopting a method which has proved successful. The real advancement of a student does not consist so much in a general knowledge of every branch of natural history, as in a searching study of some special branch of his science combined with comprehensive views of the whole.

I therefore attempted to educate each of my students in a different branch of zoölogy, instead of uniting them into classes, and have thus prepared several good assistants, who have taken charge of the arrangement of the different parts of the collection now on exhibition; and it is but justice to them to say that they have acquitted themselves of their task in a manner which does them great credit. For the last five years, the number of students who have been so engaged, has varied from ten to twenty. I trust that the systematic catalogues which are now in preparation will afford further evidence that our institution is not only adapted for the purpose of general instruction, but likely also to send forth young men, who may contribute to the advancement of science. In order, therefore, to prevent misapprehensions and misrepresentations in regard to the importance and scientific value of our collections, I beg leave to make some remarks upon the organization of museums in general. This is the more necessary since, in many respects, ours will differ essentially from all the others thus far completed, and this difference will also explain the name it bears.

A zoölogical museum should contain every thing relating to the history of the animal kingdom; but in practice and owing to the circumstances under which our science has reached its present condition, zoölogical collections consist chiefly of adult specimens of the animals now living upon earth. The remains of extinct types found, as fossils in the strata forming part of the crust of our globe, are generally collected separately and arranged by themselves, or kept in distinct museums, and even united with the geological and mineralogical cabinets. This should not be, and every year makes it more urgent that the collections of fossils should be combined with those of the animals now in existence, as they can not be accurately identified without a direct comparison with one another. Some of the most mistaken views now prevailing in our science would long ago have been abandoned, did the great museums now existing, contain such combined collections of fossil and living animals.

It has been my aim throughout the arrangement of our museum, to keep this state of things in mind, and to force upon every visitor a direct comparison of the fossil remains with their living representatives, though this arrangement is not yet completed for all the classes of the animal kingdom.

Another novel feature in the museum soon to be carried out, and for which a large number of preparations have already been made, will be the exhibition of embryological series to illustrate the correspondence existing between the successive changes in the growth of living animals and the order of succession of the representatives of past zoölogical ages.

This will save us from the necessity of remodeling the whole at some future period, as I conceive other museums will have to do, or be left behind. I may add, also, that special collections to illustrate the geographical distribution of animals have been prepared, some of which are already on exhibition. A museum founded upon a comparative study of living and fossil animals, in connection with their embryonic changes and their geographical distribution, could no longer be called simply zoölogical museum; ours is a museum of comparative zoölogy, and the law has already sanctioned that name as the only name by which it shall ever be called.

In Europe, every university has its scientific collections, generally limited to the wants of the professors in their courses of lectures, and therefore more or less extensive and arranged with more or less care in proportion as the teachers themselves are more or less eminent in their scientific attainments. Besides these university museums, there are scientific collections in most of the large cities, the best of which are in those capitals which are at the same time the seat of universities, as Berlin, Vienna and Munich, with which Frankfort may compete, though it has no university.

Above all these stand the Jardin des Plantes and the British Museum, both on account of their extent and their scientific importance. And yet it should not be forgotten that now and then private individuals have succeeded by an exclusive devotion to some one special subject, in making special collections unrivaled by the great public museums. Such is the collection of shells of Mr. Cummings in London, and such was the collection of birds of Temminick before it was incorporated in the museum of Leyden.

Now I can fairly say that we have outrun all the museums of the European universities, excepting those placed in large capitals, and that among these we would probably occupy the ninth or tenth place, but that we are still at an immense distance from the two greatest museums now existing; even though for the class of fishes I am sure we have only two superiors, and probably none for that of Echinoderms and Corals.

Measures which have been taken recently by the board of trustees, guarantee to us for all time to come the position I have here assigned to our museum, even though the immediate consequences of these measures may be a temporary embarrassment of our institution, or even a temporary suspension of its active operations. They have wisely chosen permanency in preference to a brilliant and perhaps ephemeral career. It was decided at the last meeting of the board of trustees, that the state grant of $100,000 shall be funded. This step will eventually secure to the museum an annual income of $9,000, including $3,000 from the Gray fund.

The drag which weighs us down now is in the accumulation of specimens not yet arranged, which to prepare for future exhibition will entail upon us an expenditure of between $12,000 and $15,000. But whatever may come, we shall stand permanently in a position which we may be proud to have won in less than two years. If we have not at present the means of gaining new advantages over other museums, I can also say that there exists no museum which is sufficiently endowed to gain upon us.

At this moment our museum is more than sufficient for all educational purposes, for I do not believe that there exists outside of the large capitals of Europe, a university provided with a better apparatus to teach zoölogy, and as you know few of the European universities are in large cities.

But scientific collections are not simply made to afford the necessary facilities to students: they should also be sanctuaries in which science itself is advancing, in which new knowledge is obtained by original researches, and which by their very perfection should be a standard measure by which to test the scientific culture of a country.

Now, gentlemen, the position of men of science in this country is not what it should be. I do not say that they do not enjoy all the privileges of all other citizens; they do enjoy them fully, the recognition science receives among us is gratifying in the highest degree.

If you will free your best men from that tantalizing position, raise your scientific institutions to a level with the foremost in Europe, that the American man of science may, like the American freeman, have the satisfaction of knowing, when visiting the Old World, that he is backed by the institutions he leaves at home. In so doing, you will gain another advantage—that of freeing yourselves from the importunities of those pretenders in science who surround themselves with a fictitious reputation, made up of newspaper articles, and supported perhaps by a correspondence with some tenth-rate scientific men in Europe, whom nobody knows in their native country.

The founding of scientific institutions of the highest class is a worthy object for the ambition of an enlightened nation, and such institutions should be supported merely on the ground that they are an unmistakable sign of a higher culture. It is to science the world is indebted for a growing insight into the forces of nature—to it we owe the first glimmerings of the light illuminating the plan of the creation.

The revelation which is dawning upon mankind from the study of the phenomena of nature can not fail to bring his intelligent children nearer to their Creator. What more elevating inducements could be mentioned to foster such studies? And America has a rising generation of scientific students eager to enter into the race for the advancement of knowledge. Let the community give them such institutions of learning as our age demands them, and they will repay their fellow-citizens by covering their country with scientific glory.

The means wanting to reach such a result are few and simple: encourage scientific explorations in every part of the world, provide for the means of publishing the results so obtained, secure to your country the scientific collections of eminent men whom unfavorable circumstances may induce to part with their dearly earned and precious harvest of specimens, and never leave a useful undertaking to languish from want of support. To my young friends I would give a last advice: be industrious, be patient, and do not snatch at a crown before you have fought and won your battle!

ADDRESS OF GOV. BANKS.

The original and somewhat restricted object indicated by its designation as a Museum of Comparative Zoölogy, even if confined in its action within the limits suggested by the title, opens an extended theater for self-sacrificing labor and elevated ambition.

To investigate and determine the circumstances and conditions of animal life; to dissect and compare the organs, through the agency of which animals exist; to trace their effect upon the habits, capacities and destiny of the creatures themselves; to arrange them in groups upon principles of similarity of structure and function; to ascertain the laws that regulate their distribution over the earth's surface; to show the services they render and the uses they subserve in the general economy of nature; their adaptation to purposes, and their possible contribution to the necessaries and luxuries of domestic life; their importance to commerce, manufactures and arts; and the advantage of this species of knowledge in every department of education—these things certainly constitute a branch of natural science that challenges attention, that justifies labor, and compensates for great individual sacrifices and large public expenditures.

But the name of the institution, I apprehend, but faintly indicates the purposes or the expectations of its founders.

It has a broader aspect than brick walls, scientific collections, or legislative charities suggest In imagination, at least, I see rising before me a structure of such harmonious outline and magnificent proportion, that its avowed purpose hardly covers the threshold.

Instead of guarding the domain of zoölogical inquiry, it must penetrate and subdue the three kingdoms of animal, mineral and vegetable creation; and every step in its progress will mark the bounds of original attainment and discovery, in these allied existences, though it may not gather or preserve all its evidences of research.

Whatever exhibits life, whether in the dullest form of vegetable creation or in the animating subtleness of sense and intellect, must attract its attention and receive its knowledge.

To suggest life as the subject of contemplation and research, whether of organic or inorganic form, is to summon the faculties of man to the noblest, though it may be a limitless investigation, comprehending the animate and the inanimate, the material and the immaterial, the finite and the infinite, the beginning and the end of all things.

From contemplation of a subject so far-reaching and vast, the mind instinctively shrinks from expectation of compassing an end. Beginnings in this inquiry exhaust the subtlest powers of observation and analysis, and like Hunter, the scholar, the philosopher, the Christian, is content that he does not altogether comprehend the immaculate scheme. "Life," he said, "is a property we do not understand—we can only trace the necessary steps leading to it."

This is the grand object of natural science. It is the great cause to which our museum is dedicated. It is a pursuit that exhausts the highest capacity and satisfies the noblest ambition. "We trace the steps leading to life," might well stand as the motto of the naturalist, the statesman, the philosopher, the Christian. How infinite in scope, how exhaustive of human power is the inquiry. The full realization of the divine purpose exemplified by a perfect comprehension of the gradual and systematic development of the steps leading to life, would be as if some human being, coeval in existence with twice itself, were permitted to follow the courses of the ages, independent of the conditions that run with the destiny of mortals, and by presence and suggestion instruct the successive generations of men in the laws of organic and inorganic being, in the mysteries of animate and inanimate existences.

What indifferent spectator, that to-day examines the yet imperfect collections, some of them too minute for the unaided vision; who that has acquired an interest by contributing to its foundation; who that comprehends the genius and purpose of its master, or shares in the enthusiasm imparted to his followers, or the love of labor inspired by his example, can doubt that some addition to that already known, some explanation of a mystery imperfectly understood, some correction of an error received as truth, some new discovery of the necessary steps leading to life, will be achieved, or the wisdom of that popular impulse which has planted this new organism for the diffusion of useful knowledge?

It is not my purpose, neither is it in the line of duties assigned to me, to set forth the technical advantages to be derived from the study of natural science. That has been already done by one who both comprehends and illustrates the stern brevity of logic, with harmony of expression, felicity of illustration, and a ravishing accent, musical as is Apollo's lute.

My duties are completed if I but call attention to the incidental advantages to be derived from this institution.

It is hardly to be denied—and it were scarce an advantage if denial were possible—that a feeling is creeping upon the minds of men and scholars, not merely of indifferent but interested men, that our methods of school and collegiate instruction are not in all respects best calculated to develop the superior qualities of body, mind, or conscience. It is a problem as ancient as civilization, whether acquired or native powers are more valuable, and the policy and theory of education or non-education are sometimes made to depend upon supposititious advantages of one or the other of these powers. A similar diversity of opinion grows out of what is called self-culture, as compared with that conferred by educational institutions; or, in other words, that which comes early in life, with most favored opportunity, or that which comes limping later, with such advantages only as accident vouchsafes.

It is error, in my judgment, that identifies education exclusively with acquired information, or contrasts acquired capacity with natural powers, as evincing the utility or non-utility of scholastic institutions.

That man may misapprehend its nature and abuse its privileges is apparent. To regard mere acquisition of fact, the treasures of attainment as education; to seek the culture of the mind at the sacrifice of bodily vigor; to estimate memory as the equivalent of the powers of observation, analysis and the faculty of reason; to consider, because a young man has won collegiate honors, and is therefore qualified for every pursuit of life, useful or ornamental, that he is for that reason disabled for any pursuit, except a few overcrowded professions, is both to misapprehend the nature and abuse the privileges of true education. But these things, so common among us; so correctly demarcating the line between what is called self-education and other education, if such a thing were possible, are no more the result of a true system, than—to borrow a bill of fare from Emerson—"the flesh of dried grass, and the broth of old shoes," constitutes high living.

The error, rather of practice than of theory, is that we identify education with attainment, and rely almost exclusively for instruction upon the contents of books. It is assumed that students know something because they are taught that other men know something. Men think they see, when in fact they are only looking on.

If the acquisition of facts were the exclusive object of education, books would be a safe reliance, provided that the first men were authors. But in our age, the first men make newspapers, steam engines, arguments, street railways; they plant cities, command armies, give new powers to empires, solve problems of life and death, have little time to read, much less to make books.

I welcome the creation of the museum, because it opens to its students the book of nature. Reading and writing are important to them because they are enabled thus to ascertain what was known before them, and to record their own discoveries and additions to the stock of human knowledge. Observation and comparison are their reliant powers. When a student contemplates a naked stone placed in his hand until he is able, by study, to discover its laws and analyze its character, new faculties of mind are given him, which our theories of education rarely or never contemplated.

Mr. Kohl tells us of a picture in one of the Florentine galleries, which represents a monk seated in one of the cells of a monastery, intently gazing upon a black letter volume, his hands resting upon its pages. Not a ray of light makes darkness visible, until, from intensity of study alone, from his finger's end gradually breaks a faint glimmer, which gradually strengthens, until the black letter page returns the reflection, the folds of his garment become translucent, and the cell is filled with the light of his intellect.

This is education—the education of the faculties. It proceeds from the student to the work, and does not come from the book to the man.

An institution in which this theory of instruction is daily practiced, which is frequented by students of the university and teachers of the public schools—which can not fail to become the model of scientific establishments on this continent, and will equal, if it does not surpass, the renowned museums of Europe—must renovate the customs of other institutions, and contribute to establish the true theory of mental culture.

Its pupils—like Humboldt and Agassiz, Fremont, Arago and Bache—will become a part of the scientific and intellectual development of the age, and each become in his time a type—

> "The first fiery soul
> That makes a low name honorable.
> They who take it by inheritance alone,
> Adding no brightness to it,
> Are like stars seen in the ocean,
> That were never there but for
> Their bright originals in heaven."

From such a system of education, pervading families as well as schools and colleges, we may hope to attain the highest advantages of popular intelligence—accustomed to contemplate the subtleties of nature, which, as Lord Bacon says, "so far exceed the subtleties of sense and intellect;" our scholars will avoid the errors of the scholastic age, and our people escape the quicksands of prejudice and error that have swallowed so many of our predecessors.

Our reliance is in the virtue and intelligence of the people, and not in constitutions nor in schools, nor in great men, alone.

Rome had her orators and her statesmen. Greece had her academies of learning and her schools of philosophy. Erudition poured forth her treasures to the multitude in the groves and the public walks. Philosophy unburdened her mind of its richest stores, in the streets and in the forum. The great of the age, Homer, Demosthenes, Cicero, Cæsar, answered in person the many-voiced call, and spoke face to face with the giant multitude. They had their constitutions and their laws, whose theoretic simplicity won the emulation of ages. The sister arts, poetry and painting, music and sculpture, hand in hand with the lore of the schools, and the progress of the sciences passed from perfection to perfection, approaching the standard of ideal excellence and transcending the fame of after ages. Yet Greece and Rome as free governments, lasted but for a day. The fair form of a fictitious republic arrayed in the panoply of freedom—adorned by the elegances of the arts, and protected by the supernatural powers of their philosophy—could not long withstand decay. The frail but beauteous vesture could not hide her mortality. The edifice had no sufficient foundation. The vesture of the people—the soul—was wanting. Who does not pray that America may escape a like desolating end? Who does not welcome an institution, in the benefits of which so many participate, that opens new avenues, and new methods for the discovery of the truth.

One word is due to personal character. Fourteen years since, in the autumn of 1846, a stranger reached the shores of America. He had been the pupil of the first naturalists of Europe; the companion of its first men of science; the loved friend of Cuvier and Humboldt. The zoöphytes of the coral reefs, the marine animals of European seaboards, the summits of the Alpine glaciers, knew him well; and all, alike with philosophers and rulers echoed his fame.

His mission here was to make himself familiar with the natural history and geology of this continent, upon a suggestion of Humboldt, and under the patronage of the king of Prussia.

He instantly identified himself with the scientific history of America, as before he had been a part of that of Europe. He imparted to lettered and unlettered men a taste for abstruse science. He gathered, through their aid, the scientific treasures of the continent to himself. He created the museum we propose to inaugurate, and what is the most important act of this day, he dedicates himself, his genius and his labor to its progress, until it shall surpass every scientific institution of this continent, and equal any in the world.

As president of the board of trustees, by virtue of the office I hold, one of the most satisfactory acts of my administration, in the name of the trustees representing the commonwealth, the university, and the donors; in the presence of this assembly, I dedicate the museum to his uses and the cause of natural science! May it enlist the continued support of the wise and the affluent! May it promote learning, and strengthen Christian faith! May it honor the cause of science, the commonwealth of Massachusetts, the institutions and people of America.

The audience were dismissed with a benediction invoked by Rev. Dr. Peabody.

XVI. EDUCATIONAL MISCELLANY.

NEW AIDS TO THE STUDY AND TEACHING OF GEOGRAPHY.

THE recent appearance of a new series of Descriptive, Physical, and Historical Maps, drawn by Mr. Geo. Schrooter, Chartographer of the American Geographical Society, is perhaps not unknown to most of the readers of this journal. The merits of this series are, however, so extraordinary, the maps being so great an advance upon all previous efforts at geographical delineation in this country, that we have deemed it our duty, as the chroniclers and promoters of educational progress, to present an extended notice and description of them. We believe this to be due not only to the cause of sound learning, but to the accomplished geographer, who has designed, and the enterprising publishers,* who have brought out in such artistic style, a collection of earth-pictures destined to revolutionize a very important department of instruction in our schools of all grades. As a somewhat elaborate notice is here attempted, the subject will, for the convenience of the reader, be treated by topics which will be definitely announced.

WHAT IS GEOGRAPHY?

It is, by most compilers, defined to be a description of the earth's surface, and, as it is treated in our current popular text-books, this description is limited almost entirely to meager details of political divisions, with a smattering of social and historical statistics, without significance or value to the learner. It has been the bane of popular geographical instruction, that it has been addressed to the memory almost exclusively. It has not descended to the *causes* of the multitudinous facts presented, nor has it searched for the momentous consequences of the physical structure of the earth's surface. It has not seized "those incessant mutual actions of the different portions of physical nature upon each other, of inorganic nature upon organized beings, upon man in particular, and upon the successive development of human societies. In a word, it has failed to consider the reciprocal action of all those forces, the perpetual play of which constitutes what may be called *the life of the globe.*" It has forgotten that the earth is the abode of man, that it sustains relations *to* man, and man to it, and hence it has, as Guyot expresses it simply, "coldly anatomized the globe, by merely taking cognizance of the arrangement of the various parts which constitute it."

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* P. Reid & Co., No. 264 Canal-street, New York.

The earth is the grand theater of all man's actions, it is the platform whereon the great problem of human development and civilization is to be solved. And since the Creator has placed humanity upon it for this purpose, it is evident that he has *adapted* it to the part it was designed to play in the accomplishment of His all-wise purposes. If this be so, then the study of the earth, or Geography, it is manifest, should deal not only with surface descriptions, but with structure, with causes, with consequences. It should analyze, interpret, compare. It should seek to know the influence of structure and physical phenomena upon vegetable and animal life, and, in short, it should aim to learn how the earth and its manifold forms of life, both organic and inorganic, are calculated to promote the civilization and happiness of the race. It should strive to teach man how to use these wise provisions of the Creator, so as most effectually to secure the end for which both they and he were created.

A few Pertinent Examples.

It is well to know the boundaries of a state or a kingdom, but it is far better to superadd to this knowledge the relations either political or physical which determined those boundaries. It is not generally understood even among teachers, and much less among the masses of the people, that the limits of political divisions are in most cases determined primarily by physical considerations. And yet, this is a fact full of instruction. A well-constructed map, one which superadds to the mere forms of contour, a proper expression of the physical structure, is all that is needed to prove this fact to a careful observer. And how can we interpret the great evolutions of history except in the light of the physical as well as political causes which generated them? In fact, physical relations often themselves become the germs of political causes. The presence of a gold mine may lead to the conquest of a kingdom by a covetous neighbor, and hence to an entire change of its territorial limits. In the laying out of states, what more than the presence of rivers, lakes, and spurs of hills, or a range of mountains, determines the question of boundary?

It is useful to learn that rivers abound in a given country, and that these rivers rise at certain points, take certain directions, and pour their waters into certain reservoirs. But it is vastly more useful to inquire how those rivers came to be there, and what great purposes they subserve, both in the economy of nature and in the operations of commerce. Of what worth is it to teach that a mountain chain stretches here, or that a vast plateau spreads its monotonous surface there, without a further knowledge of the influences which these great structures exert on climate, on production, on animal life, and hence on the life of man? Why should it not be known universally, that these are the great refrigerators and condensers of our planet? Why should it not be a common-place knowledge, that an altitude of no more than 350 feet makes a difference of one degree in the mean annual temperature? An altitude of only 1,600 feet almost completely changes the character of the climate, soil, productions, and hence of the people of a locality. There are abundant examples of this pregnant fact all around us. Compare the climate, soil, productions, and people of New Hampshire or Vermont, with those of New Jersey or Delaware. Compare New York and Pennsylvania with Georgia and Alabama. Or, what is more striking, compare New England with the Western States in the same latitude.

OCEANIC INFLUENCES.

Is it more important to know that, between the old and new worlds, two vast oceans, the Atlantic and Pacific, stretch their broad bosoms, that they are respectively, three and ten thousand miles wide, and that the waters of both are highly charged with salt, than it is that they are instinct with life, that restless currents sweep over them in nearly all directions, modifying the climate and productions of immense territories, facilitating or obstructing the commerce and intercourse of nations; that between these and the atmosphere, in currents, there are striking coincidences in form and direction, and that by their mutual play the purity and healthfulness alike of air and sea are preserved, and thus they move majestically and ceaselessly on, freighted with priceless blessings to man?

These few examples and contrasts are perhaps sufficient to show the absurdity of prevailing methods of geographical instruction, as well as to indicate that higher views of the grand relations existing between the "earth and man," which should be the central thought in all our studies in this department. It is manifest that geography, pursued in the spirit here indicated, which is the spirit of Humboldt and Ritter, would become not only one of the most attractive, but one of the most sublime and elevating, not to say useful studies in the whole range of scientific inquiry.

WHY HAS NOT THIS METHOD PREVAILED?

The chief obstacle to the prevalence of this method heretofore has been the want of the requisite aids coming within the reach of all. Our maps have been too strictly confined to superficial details. They have been inaccurate, out of proportion, devoid of physical representations, badly colored, drawn on irregular scales, or no scale at all, thus rendering comparison impossible. To study the earth with all its vast organs, so to speak, to investigate it in the light of its sublime and varied phenomena, it is requisite that we should possess ourselves of truthful likenesses, that we may seize upon these phenomena as if by proxy, and hold them in our grasp till we can properly observe, compare, and characterize them. The field is so vast, and the range of our vision is so limited, that there must needs be reduction, and this reduction must be so skillfully performed as to preserve all the essential truthfulness of the original.

DESCRIPTION OF THE INDEPENDENT SERIES.

These maps are engraved, and printed on fine white cambric. The coloring is rich and harmonious, striking the eye most agreeably. The outlines, and all the physical features, such as the mountain ranges, the river systems, and the desert regions, with the range of the different varieties of animal and vegetable productions are presented in bold relief, and thus well calculated to strike and impress themselves upon the mind of the student. The scale upon which they are drawn is uniform, so that we see not only the continental masses, but all the natural features, both of land and water, as well as the political divisions, in their actual relative proportions as to size and form, thus rendering the study of comparative geography possible and practicable. Associated with the maps there are well-executed profiles, admirably colored, and on the same scale, exhibiting the reliefs of the earth, the mountain masses, the plateaus, the table-lands, and the valleys in their relative elevations above the sea-level, thus affording ample means for the study of the physiology of the great terrestrial forms, and their influences upon the life of the globe.

The maps may be folded, and the entire series can easily be compressed into a space so small as to occupy an ordinary table-drawer. Being of cloth exclusively, they are very durable, and will last for twenty years. The coloring being in oil, the maps may be washed in soap and water, without the least disturbance of the colors. In a word, they comprise, in respect to mechanical execution, artistic finish, and scientific accuracy, all that the most ardent lover of geographical researches could desire, in the way of school aids in this department.

PARTICULAR DESCRIPTION OF THE MAPS.

We begin with Europe, because it is the smallest of the series, and may be regarded as the unit of comparison as to size. This map occupies a space of eighteen square feet, being four and a half feet long and four feet wide. The coloring is peculiarly brilliant and rich, greatly relieving the outlines of the complicated tissue of political divisions which make up this interesting continent. The river systems and mountain chains are delineated in a style so bold and distinct, that to see is to believe. They are in striking contrast to the ill-defined and inaccurate representations of common maps.

The northern limit of the vine and of grain, the lines of the annual temperature of the freezing point, and the southern limit of polar ice are distinctly shown, and add much to the interest of the pupils' research, as into the structure and history of that continent, which plays so important a part in the march of civilization.

There are two sets of profiles exhibiting the reliefs, accompanying the map of Europe. Three of these sections run from east to west, and the remaining two extend from north to south, and together they afford the most complete view of the continent, its form and structure, ever afforded to the student of geography in our country.

Of the east and west sections we have the northernmost on the parallel of 60°, extending from the Shetland Islands eastwardly, to Mt. Konjakooski in the Ural range, and passing through the highest peak of the Scandinavian hills, elevated about 5,000 feet above the level of the sea. There is almost an uninterrupted level from the eastern base to the plains of Northern Russia, in longitude 32° east. From this point the great plain referred to, which is about 1,000 feet above the sea-level, extends to the Urals, with but little variation in the elevation of the surface.

The second section runs from Land's End eastwardly along the parallel of 50°, through the English Channel, touching the northern plains of France and Belgium, cutting the Erzebirge and Sudetes, and passing through the immense plains of Galicia and Southern Russia, terminating at the Caspian sea. The highest peak of the Carpathians is shown in perspective in the northern distance. The next and last of the east and west profiles, stretches from the Azores through the Sierra de Estrella of Portugal, the Spanish plateau, on which rests the city of Madrid, and the Mediterranean, cutting Minorca, Sardinia, the Italian Apennines, Turkey, and the plateaus of Asia Minor, with the towering summits of the Caucasus in the distance.

The longitudinal sections connect, 1st. Cape Matapan in Greece, with the North Cape, affording us beautiful views of Mts. Elias and Parnassus in Greece, and the Balkans in Turkey, and Transylvania, stretching across the immense plains of Poland, Finland, and Lapland; 2d. Gibraltar on the south, cutting the Pyrenees in Spain, the Alps in Switzerland, and the Carpathians in Austria, thence stretching far away over the plains of Central Russia, to the base of the Ural Mountains on the Siberian boundaries.

The sublime contrasts so vividly presented by these alternations of mountain, valley, and plain—the vivid pictures presented of the great terrestrial masses, leading the student to an investigation of their functions and uses in the economy of nature, and their relations to climate, productions, animal life, and the development of man, can not fail to impart a charm to geographical studies, heretofore unknown in the history of our schools.

Asia and Profiles.

Asia, the largest and the most interesting of the five great divisions, is here represented in a style worthy of her grandeur in physical structure, and of her distinction in the march of history. Asia was the cradle of the race, and, save the single family which was borne aloft on the world of waters, proved also to be its grave. For thousands of years she was almost the only theater upon which the drama of human history, with its multitudinous scenes, events, and characters, was being performed. It is also the abode of all that is vast and sublime in physical structure; of all that is varied and beautiful in animated nature; of every thing that is "pleasant to the sight and good for food." Properly to represent her, therefore, in these great characteristics, is worthy of a truly noble ambition. Accordingly, Mr. Schroeter has given us two pictures—the map proper, occupying nearly fifty square feet, and a series of seven grand profiles, covering about twenty square feet. These graphic earth-pictures it is difficult, and hence hazardous to attempt to describe. No *word*-pictures can do them justice. To be appreciated, they must be seen.

Passing by the delineations of the merely descriptive or rather political characteristics, it may be stated generally, that in boldness of outline, and in harmony and beauty of coloring, this map is thus far the gem of the series. Placed at a distance of thirty or forty feet from the pupil, it serves the purpose of an admirable outline, in which all the minute details are lost in the distance. But when within ten or fifteen feet of a class, it presents an immense mass of instructive physical facts, of the most varied and interesting character. Beginning on the north, we have the polar ice-fields, exhibiting the distribution of the frozen masses in all their gradations, from the closely formed "pack," to the floating bergs, wending their lonely way to more southern climes. Next we observe the almost endless plains of Northern Siberia, stretching away for thousands of miles, and studded here and there with deserts, whose peculiar character is indicated, in the drawing, by the difference in delineation, showing whether it be of the silicious or woody description. Approaching the southern border of this mysterious land, the magnificent series of mountain-chains, and the succession of vast plateaus, which distinguish Asia above all other parts of the earth, begin their majestic marches. First, there is the chain of the Altais, whose highest peak, Bjelucha, is 11,000 feet above the ocean. This is immediately succeeded by the plateau of Dzonugary, 1,300 feet; the Thian-Shan chain, Mount Bogdo-vola, 18,000 feet high; the Desert of Lop, and the northern basis of the Quenlun, the former 2,000 and the latter 5,000 feet high; the chain of the Quenlun 21,000 feet; the plateau of Katschi and

Tubet, 11,000 and 14,000 feet, and finally culminating in the great Himalayan chain, 1,400 miles long, whose highest peak, Dhavalajire, towers to the immense altitude of 28,070 feet, or more than five miles above the sea-level, being the highest point of land yet discovered upon the globe. Nothing can exceed the boldness, distinctness, and beauty with which these mountain ranges are delineated. Great reliefs as they are upon the otherwise monotonous plain of the terrestrial surface, they stand out upon this map with a vividness almost rivaling the reality in nature. The northern range of the camel, the northern limit of palms, of grain, and of trees, the circuit embraced within which the eruptive effects of the volcano Tombora in the island of Sumbarva were experienced is defined, and the great Chinese Wall, and other interesting historical physical facts are presented to relieve the monotony of mere descriptive details. But it is not until we survey the profiles which accompany this splendid map, that the grandeur of the physical forms which characterize this part of the world is fully revealed. Of these profiles, four extend in an east and west direction, while the remaining three are longitudinal. The first section begins at Mount Obdorsh, in the Ural chain, and, following the Arctic Circle, terminates at East Cape, in Bhering's Straits. From the base of the Urals to East Cape, there is an almost uninterrupted plain. The second section opens at the Ural river, in latitude 50°, on the west, cutting the steppes of Kirghisz and Ishim, the Altai mountains, and passing through Mongolia, Siberia, and Mongooria, terminating at Cape Lopatka. After leaving the steppe of Ishim, the surface assumes an undul~~ating shape,~~ the mountain summits reaching an elevation of from 5,000 to 15,000 feet.

Profile number three, commences at the Dardanelles, cutting Mount Ida, 5,400 feet in height, Mount Olympus being in the distance, and passing along the 4th parallel through Asia Minor, the plateaus of Armenia, with Mount Ararat in the distance, 17,300 feet altitude, the Caspian sea, 38 feet below the level of the ocean, thence rising through the desert plateau of Turkistan to the lofty summits of the Bolordagh, 18,000 feet, and finally passing through the vast steppes of Chinese Tartary, the peninsula of Korea, and the island of Niphon, of the Japanese group.

In the fourth section or profile we have exhibited in a more striking form than in any other, the characteristic structure of this vast continent. The section commences at Suez, on the west, and terminates at Shanghi on the east, running along on the parallel of 30° north. It is here that the grand contrasts presented by the immense plains of Arabia, Persia, Afghanistan, Northern India, and China, with the multitudinous summits of the Himmalayan range shooting up to an altitude of 27,070 feet, most strikingly appear. This section not only gives us the fascination of vast heights and distances, such as are to be found nowhere else on our planet; but it affords us an admirable illustration of what is understood by the "*backbone* of a continent." Words are inadequate to describe even the *fac-similes* as presented by these splendid views of nature in her "grandest moods." To approach even a faint conception of the reality, these pictures must be seen and studied. By their aid we may obtain some idea of the sublime emotions experienced by Humboldt and his companions, while surveying those majestic "hills, rock-ribbed, and ancient as the sun."

Which, as the poet sings, are the solemn decorations of the great tomb of man.

The final east and west profile begins at Mecca, in Arabia, and extends along the twentieth parallel to the Gulf of Tonquin. We are thus afforded a view of the great desert of Robar or Rhali, in Arabia, which is elevated to a height of 6,000 to 8,000 feet above the sea. The line thence passes across the Arabian Sea to Bombay, cutting the western Ghauts, the plateau of Deccan, the eastern Ghauts, the Gulf of Bengal, and the high summits of farther India. This section affords some fine contrasts of desert plains, elevated plateaus, and lofty mountains alternating with stretches of sea and gulf, and indicating great variety of structure, as well as of climate and productions.

The two remaining profiles follow the direction of the meridian, the westernmost connecting Ceylon with the mouth of the great River Obe, in Siberia, in longitude 80° east from Greenwich. The more easterly commences at the Straits of Sunda, and running along the 105th meridian, terminates at Cape Cheluskin, in the Arctic Sea. By the aid of these two profiles, the student is enabled to obtain an accurate idea of the great laws of relief, which in Asia are most strikingly illustrated in a longitudinal direction. As we study the important physical facts so boldly and beautifully presented for contemplation in these sectional profiles, our only wonder is that we have been content to grope about in darkness after the truth so long and so patiently. Certain it is, that since the means of gaining a higher conception of the vastness and grandeur of the physical forms which gem the surface of our planet are now and here afforded us, they will hereafter be deemed indispensable to the rational pursuit of geographical studies, and they must become the common inheritance of every institution of learning, claiming to be respectable, and aiming to meet the demands of our time.

We content ourselves with this imperfect notice of the admirable series of Mr. Schroeter. Time and space will not permit a full description of each map, and we have chosen Europe, the smaller, and Asia, the larger number of the set, as presenting a fair average of the merits of the whole.

This paper can not be more appropriately closed, than by giving the subjoined brief abstract of the author's views in regard to the necessities of such a series of geographical representations as is demanded by the nature of the subject, and the wants of a rational system of school instruction:

"The construction of school maps, as an important medium of education, has not attracted the attention of the scientific world as much as the subject deserves.

"1st. The maps should be large and freed from lettering; such can alone possess the advantage of giving true and bold pictures, undisturbed by any thing not in conformity with nature. A great many facts of physical and political geography cannot be explained on the small maps of a school atlas.

"2d. It should always be remembered and shown in the projection, that part of a globe is represented, and the projection should be accurately computed according to this principle, and no attempt should be made to suit the convenience of the compiler.

"3d. As much detailed information as possible should be given, so that the endless variety of nature may be indicated, and the child thus induced, with the assistance of the teacher, to form an opinion, by his own judgment of the general types and ruling laws. Facts should serve as a foundation for general definitions, and not be mutilated to harmonize with glittering generalities.

"4th. A sound judgment, based on science and philosophy, should direct the selection and arrangement of such detailed information.

"5th. The execution should be bold and distinct, performed with artistic taste and skill, so as to make the maps approach the effect of a picture.

"6th. Coloring, too often neglected, should be carefully arranged and tastefully executed. The impression of colors on a child's mind exceeds in duration and intensity, by far, that of monochromatic drawings,—which fact should be taken into consideration.

"7th. They should be so constructed as to enable the teacher to use any of the numerous excellent text-books published, and not be dependent upon any particular system.

"8th. A uniform scale should be adopted for the corresponding maps; the utility and necessity of this will be apparent to all practical teachers.

"9th. Judiciously selected and executed profiles (of a uniform scale), illustrating physical geography, should accompany each map."

In conformity with these principles, the "Independent Series of Outline, Descriptive, Physical, and Historical Maps" have been constructed by Mr. Schroeter.

The series consists of one set of seventeen maps, averaging about thirty-six square feet, and a smaller set of ten maps, averaging about nine square feet. W. F. P.

EDUCATIONAL USES OF THE STEREOSCOPE.

The command which man is acquiring over nature is one of the remarkable features of our time. He is penetrating into her secret processes, and learning the laws and methods of her workings, with a success that outrivals the dreams of the alchemists. From year to year, he is drawing her mighty power into his service, and making her to achieve for him results that seem almost magical. He binds down steam to be the drudge in his workshops; he makes electricity his messenger from continent to continent; and now he is constraining the light to be his draughtsman, and to sketch with an etherial pencil, all that is most beautiful or sublime in the outward world. The Daguerreotype in its various modifications, catches and makes durable the ever-changing expression of the human face, the landscape, and whatever is most striking in nature; and now comes the Stereoscope, and in the words of Sir David Brewster, "reproduces in all their roundness and prominence the objects and the scenes themselves." This is the characteristic of this wonderful instrument, that it gives the solidity of nature to whatever it represents, so that we see it, not as on a plane surface, as in pictures, but *standing out* with life-like distinctness. It is especially adapted to sculpture and architecture, which it has the power of bringing before the eye with the utmost exactness and vividness. Nothing can be more true to nature than such views as the Ruins of Karnak, the winter scenes at Niagara, (which in their icy fixedness are more like architecture than landscape,) and the Statuary of the Vatican. It is the best substitute hitherto discovered, and we might almost say that it is the best possible substitute for foreign travel; and it enables us to fill our parlors and our schools with the noblest treasures, both of Art and Nature, and study them at our leisure, coming back to them, from time to time, until we have mastered every feature, as no traveler on the wing can do.

As a help in our schools to the study of Geography and History, and the rudiments of the Fine Arts, it seems to us invaluable. It will give a far more accurate knowledge of localities, buildings, statues, &c., than any mere verbal description can ever do; while as a means of educating the mind to the appreciation of the beautiful, it can not but be very useful. From the map to the globe was a great step; then to maps and globes with raised surfaces exhibiting the *contour* of the earth's face—its mountains and valleys and table lands; and now the Stereoscope supplies what was still lacking, and takes the separate objects and brings them before us in all the distinctiveness and prominence of reality and life.

These reflections on the Educational Uses of the Stereoscope are suggested by a recent opportunity we have enjoyed of examining a series of views selected from the immense collection of the *London Stereoscopic Company*, 594 Broadway. The pleasure and advantages of former travels have been renewed, the fading recollections of churches, palaces, monuments, and pictures, have been revived; and our knowledge of the "homes and haunts of genius," and of distant scenes and objects of art, of living persons, and the ruins of Nineveh, Egypt, and Palestine, which we have never had, and never shall have an opportunity of visiting in person, has been greatly extended by this quiet examination. Every house and every school should have a Stereoscope and selection from the views of this Company.

Instruments can be had, of any price; and as the views manufactured by different companies are all on the same scale, the same instrument will answer for any number of views. These last can be extended from year to year, as called for to illustrate different studies, and subjects of interest.

DEDICATION OF THE EVERETT SCHOOL-HOUSE.

The new school-building erected on Northampton street, named the Everett School-house, in honor of that distinguished orator and friend of education, was formally dedicated on the 17th of September, by the usual exercises, which took place in the large upper hall of the building. This building, which is erected on a plan which does not differ materially from the other school-buildings, is finished and furnished throughout in the most perfect manner, and in all respects may be regarded as a model Boston school-house. The first floor over the heating apparatus is fire-proof, an improvement which will be adopted in regard to the houses hereafter constructed.

The platform was occupied by His Honor Mayor Lincoln and the members of the City Government, Hon. Edward Everett, President Felton, Hon. Robert C. Winthrop, Rev. Dr. Putnam, Hon. J. D. Philbrick, and others.

The exercises commenced with chanting "The Lord's Prayer," by the pupils. Rev. D. C. Eddy then read selections from the Scriptures, after which a prayer was offered by Rev. Dr. Burroughs. A commemorative song, written for the occasion by Mr. Rufus Leighton, was sung. Alderman Bailey, Chairman of the Building Committee, then delivered the keys of the school-house to Mayor Lincoln, who responded briefly to the remarks of Alderman Bailey, and then handed the keys to Mr. E. F. Thayer, Chairman of the local School Committee. Mr. Thayer made a few remarks and presented the keys to Mr. George B. Hyde, Principal of the Everett School. A dedicatory hymn, written for the occasion by Mr. Wm. T. Adams, was sung by the pupils. Mr. Everett was then introduced by the Chairman, and made the following address:—

ADDRESS OF EDWARD EVERETT.

Mr. Chairman:—You will easily believe that I feel a peculiar interest in the occasion that has called us together. The dedication of a new first class school-house is at all times an event of far greater importance to the welfare of the community than many of the occurrences which at the time attract much more of the public attention, and fill a larger space in the pages of history. The house which we this day dedicate is to be occupied by a school which had already, as the Dwight school for girls, established an enviable reputation among the sister institutions. It is now, in consequence of the rapid growth of this part of the city, transferred, with the happiest prospects, to this new, spacious and admirably arranged building—a model school-house, fit for the reception of a model school. I hope, as a friend to education from my youth up, I should duly appreciate the importance of such an event; but you have kindly given me a reason—to the strength of which it would be affectation to seem insensible—for taking a peculiar interest in this day's ceremonial.

One of the highest honors which can be paid to an individual—one of the most enviable tokens of the good opinion of the community in which he lives—is to connect his name with some permanent material object, some scientific discovery, some achievement in art, some beneficent institution, with reference to which, by word or by deed, he may be thought to have deserved well of his fellow-men. Hundreds of towns and cities on the continent recall the memory of the great and good men, who, in peace and in war, founded and sustained the liberties and rights of the country. Science gives the name of the astronomer to the comet, whose periodical return he has ascertained. Botany commemorates her votaries, in the flowers, and the trees—the Kalmias, the Dahlias, the Robinias—which they first discovered and described. The fossil relics of the elder world are designated by the names of the geologists who first exhumed them from their adamantine graves; and we can not but feel that one of the strongest instincts of our nature is gratified by these associations.

But what are these lifeless, soulless substances, these mute, inanimate bodies in the heavens above, or the earth beneath—the vaporous comet, the fading flower, the extinct animal, whose very skeleton is turned into stone—compared with an institution like this—a living fountain of eternal light, a flower garden planted in each succeeding year, with germs of undying growth; a nursery, beneath whose fostering wings so many immortal spirits shall be trained up in the paths of duty, usefulness, and happiness; and in which you permit me to hope that my poor name will be kindly remembered, as long as the schools of Boston shall retain their name and their praise in the land; and that I am well aware will be as long as Boston herself shall retain her place on the earth's surface; for as long as there is a city council to appropriate a dollar, or a treasurer to pay it, I am sure it will be voted and paid for the support of the schools. Devoted for a pretty long life to the public service, in a variety of pursuits and occupations, laboring, I know I may say diligently, and I hope I may add, though sometimes with erring judgment, yet always with honest purpose, for the public good, at home and abroad, I frankly own, sir, that no public honor, compliment, or reward, which has ever fallen to my lot, has given me greater pleasure than the association of my name with one of these noble public schools of Boston.

They are indeed, sir, the just pride and boast of our ancient metropolis, and it is with great propriety that you select the 17th of September for the dedication of a new school-house. As the corporate existence of the city dates from that day, so nothing can contribute more to its continued prosperous growth—to its perpetuated life—than the organization of one of these admirable institutions. What offering to our beloved city, on this its two hundred and thirtieth birthday, can we present to her more appropriate, more welcome, more auspices of good, than the means of educating eight hundred of her daughters? Nor is it the birthday of our city alone. On this day, seventy-three years ago, the Constitution of the United States went forth to the people from the hand of the peerless chief, who, whether in war or in peace, commanded all their respect and united all their affection. The best, the only hope under Providence, that we may long enjoy, we and our children, the blessing which it secures to us as a united, happy, and prosperous people, is in the intelligence, virtue, and enlightened patriotism of which these free schools are the great living fountain.

We are accused sometimes by our brethren in other parts of the country, and by our friends on the other side of the water, with being a little given to self-laudation. I don't think that the worst fault of a community, though it may be carried too far for good taste. But it implies at least the possession of something, which we not only ourselves think worthy of praise, but which we have reason to believe is held in esteem by others. For I really do not think we habitually over-praise the common schools of Boston. Not that they are perfect; nothing human is perfect. but I must think it as liberal, comprehensive and efficient a system, as the imperfection of human affairs admits. It aims to give to the entire population of both sexes a thorough education in all the useful branches of knowledge. If there is a class in the community so low that the system does not go down to them, it is for causes which no system, established by municipal authority in a free country, can overcome. In all cities as large as Boston, there must be some hundreds of unhappy children, such as those to whom I alluded last Saturday, (it makes one's heart bleed to see them,) whose wretched parents prefer sending them into the streets to beg, to gather chips, to peddle lozenges and newspapers, rather than to send them to school. But with reasonable coöperation on the part of the parents, the city does certainly, as I have said, provide the means by which a thorough education, in all the elementary branches of useful knowledge, may be attained by all her children.

The cost at which this end is obtained, bears witness to the liberality of the city. I perceive by the Auditor's report, that, for the last financial year, the expenditure on the schools, exclusive of school-houses, amounted to $373,668.61; for school-houses, $144,202.67, making a total of $517,371.28—$17,371 over a half a million of dollars for a single year, which I am inclined to think is, in proportion to our population, a larger expenditure for the purposes of education than is made by any city or people on the face of the globe.

The school-house, whose dedication we are assembled to witness, is for the accommodation of a girl's school; and this circumstance seems to invite a few words on female education.

FEMALE EDUCATION.

There is a good deal of discussion at the present day on the subject of Women's Rights and her education. No one would be willing to allow that he wished to deprive them of their rights, and the only difficulty seems to be to settle what their rights are. The citizens of Boston, acting by their municipal representatives, have long since undertaken to answer this question in a practical way, as far as a city government can do it, by admitting the right of the girls to have, at the public expense, as good an education as the boys. It is not in the power of the city to amend our constitutions, so as to extend political privileges to the gentler sex, nor to alter the legislation which regulates the rights of property. But it was in the power of the city to withhold or to grant equal privileges of education; and it has decided that the free grammar schools of Boston should be open alike to boys and girls. This seems to me not only a recognition at the outset of the most important of Women's Rights, viz., equal participation in these institutions, but the best guaranty that if in any thing else the sex is unjustly or unfairly dealt with, the remedy will come in due time. With the acknowledged equality of woman in general intellectual endowments, though tending in either sex to an appropriate development, with her admitted superiority to man in tact, sensibility, physical and moral endurance, quickness of perception, and power of accommodation to circumstances, give her for two or three generations equal advantages of mental culture, and the lords of creation will have to carry more guns than they do at present, to keep her out of the enjoyment of any thing which sound reasoning and fair experiment shall show to be of her rights.

I have, however, strong doubts whether, tried by this test, the result would be a participation in the performance of the political duties which the experience of the human race, in all ages, has nearly confined to the coarser sex. I do not rest this opinion solely on the fact that these duties do not seem congenial with the superior delicacy of woman, or compatible with the occupations which nature assigns to her in the domestic sphere. I think it would be found, on trial, that nothing would be gained—nothing changed for the better—by putting the sexes on the same footing, with respect, for instance, to the right of suffrage. Whether the wives and sisters agreed with the husbands and brothers, or differed from them—as this agreement or difference would, in the long run, exist equally in all parties—the result would be the same as at present. So, too, whether the wife of the husband had the stronger will, and so dictated the other's vote, as this, also, would be the same on all sides, the result would not be affected. So that it would be likely to turn out that the present arrangement, by which the men do the electioneering and the voting for both sexes, is a species of representation which promotes the convenience of all and does injustice to none.

Meantime for all the great desirable objects of life, the possession of equal advantages for the improvement of the mind, is of vastly greater importance than the participation of political power. There are three great objects of pursuit on earth—well-being, or happiness for ourselves and families; influence and control over others; and a good name with our fellow-men, while we live and when we are gone. Who needs be told, that, in the present state of the world, a good education is not indeed a sure, but by far the most likely means of obtaining all the ends which constitute material prosperity, competence, position, establishment in life; and that it also opens the purest sources of enjoyment. The happiest condition of human existence is unquestionably to be found in the domestic circle of what may be called the middle condition of society, in a family harmoniously united in the cultivation and enjoyment of the innocent and rational pleasures of literature, art and refined intercourse, equally removed from the grandeurs and the straits of society. These innocent and rational pleasures, and this solid happiness, are made equally accessible to both sexes by our admirable school system.

Then for influence over others, as it depends much more on personal qualities than on official prerogative, equality of education furnishes the amplest means of equal ascendency. It is the mental and moral forces, not political power, which mainly govern the world. It is but a few years since the three greatest powers in Europe, two on one side and one on the other, engaged in a deadly struggle with each other to decide the fate of the Turkish empire; three Christian powers straining every nerve, the one to overthrow, the two others to uphold the once great and formidable, but now decaying and effete Mohammedan despotism of Western Asia. Not less than half a million of men were concentrated in the Crimea, and all the military talent of the age was called forth in the contest? And who bore off the acknowledged palm of energy, usefulness and real power in that tremendous contest. Not emperors and kings, not generals, admirals or engineers, launching from impregnable fortresses and blazing intrenchments, the three-bolted thunders of war. No, but an English girl, bred up in the privacy of domestic life, and appearing on that dread stage of human action and suffering, in no higher character than that of a nurse.

And then for fame, to which, by a natural instinct, the ingenuous soul aspires:

> "—— The spur which the clear spirit doth raise,
> (The last infirmity of noble mind,)
> To scorn delights and live laborious days"—

need I say, that the surest path to a reputation for the mass of mankind is by intellectual improvement; and that in this respect, therefore, our school system places the sexes on an equality. Consider for a moment the spectacle presented by the reign of Louis XIV., the Augustan age of France, rich in the brightest names of her literature, philosophy, politics and war—Pascal, Descartes, Corneille, Racine, Lafontaine, Moliere, Bossuet, Fenelon, Bourdaloue, Massillon, Colbert, Conde, Turenne, Catinat. Among all these illustrious names there is not one that shines with a brighter or purer ray than Madame de Sevigne; not one whose writings are more extensively read by posterity; not one in whose domestic life and personal character all future ages will probably take a deeper interest. The other distinguished individuals whom I have mentioned, we regard with cold admiration, as personages in the great drama of history. We feel as if Madame de Sevigne belonged to our own families. The familiar letters principally to her daughter, written by this virtuous and accomplished woman, who preserved her purity in a licentious court, who thought with vigor and wrote with simplicity, earnestness, and true wit in a pedantic and affected age, have given her a place among the celebrities of France, which the most distinguished of them might envy.

Apart then, girls, from a preparation for the pursuits, duties, and enjoyments of life, which more especially pertain to your sex, in the present organization of society, you possess in these advantages of education the means of usefulness and (if that be an object) of reputation, which, without these, would be, in a great degree, monopolized by the stronger sex. The keys of knowledge are placed in your hands, from its elemental principles up to the higher branches of useful learning. These, however, are topics too familiar on these occasions to be dwelt upon, and I will conclude by offering you my best wishes, that the reputation already acquired by the Dwight School for girls may be maintained under the new organization; that your improvement may be proportioned to your advantages; that your progress may equal the warmest wishes of your teachers, parents, and friends; and that you may grow up to the enjoyment of the best blessings of this world, and the brightest and highest hopes of the world to come.

THE LOWE PRINTING PRESS AND OFFICE.

Among the useful appliances of a large educational establishment, or of a Family School, we should name "*The Lowe Printing and Letter-copying Press*," with an outfit of *Composing Stick*, *Case and Font of Type*, *Ink Roller*, *Blocks and Bearers*, *Can of Ink*, *&c.*, which can be got of the Lowe Press Co., No. 13 Water street, Boston, for $43. We know of no better school than such a printing office for acquiring the habit of correct spelling, capitalization, punctuation, and paragraphing, while the pupils are printing Circulars, Questions for the daily, weekly, or quarterly examinations, Catalogues, and Blanks of various kinds for the use of the school, or a Monthly Paper for the amusement and improvement of the contributors in composition.

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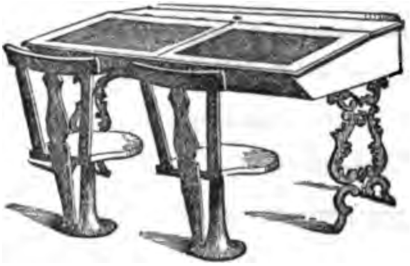

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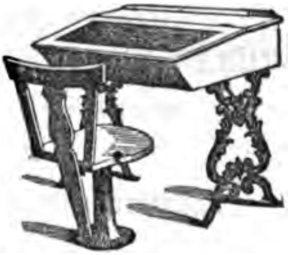

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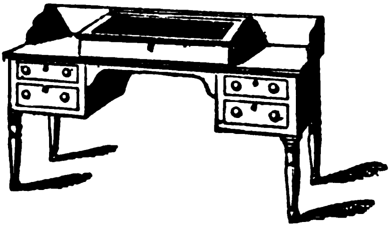

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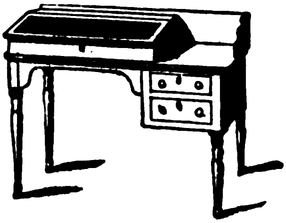

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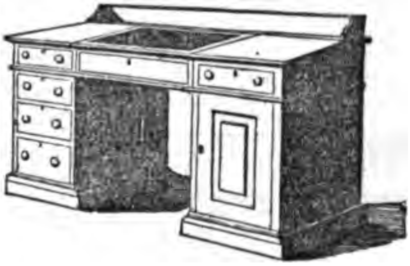

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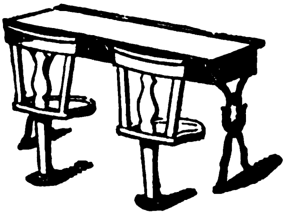

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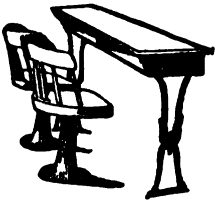

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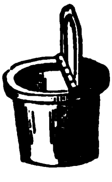

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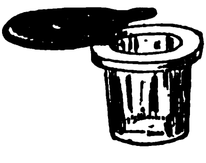

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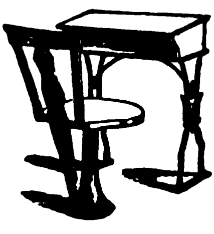

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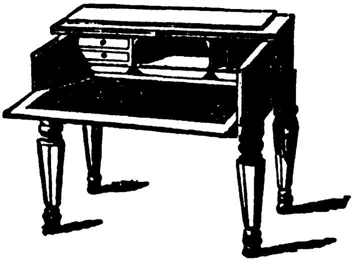

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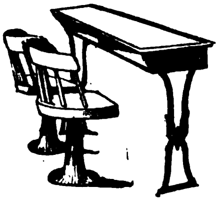

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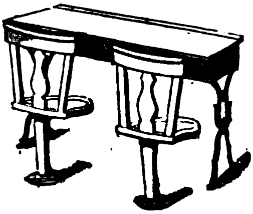

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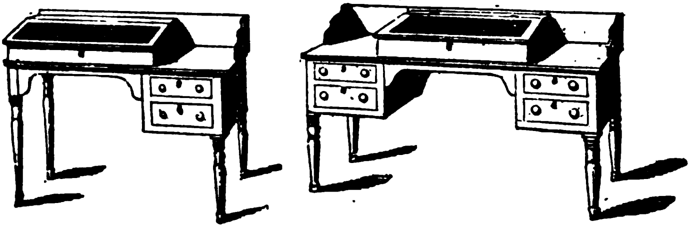

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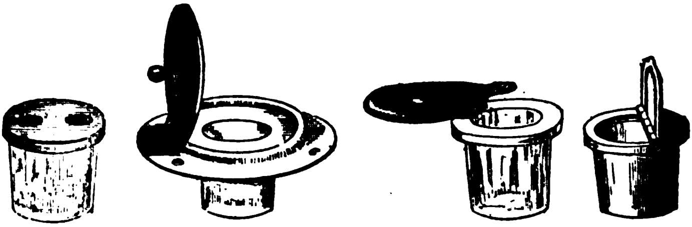

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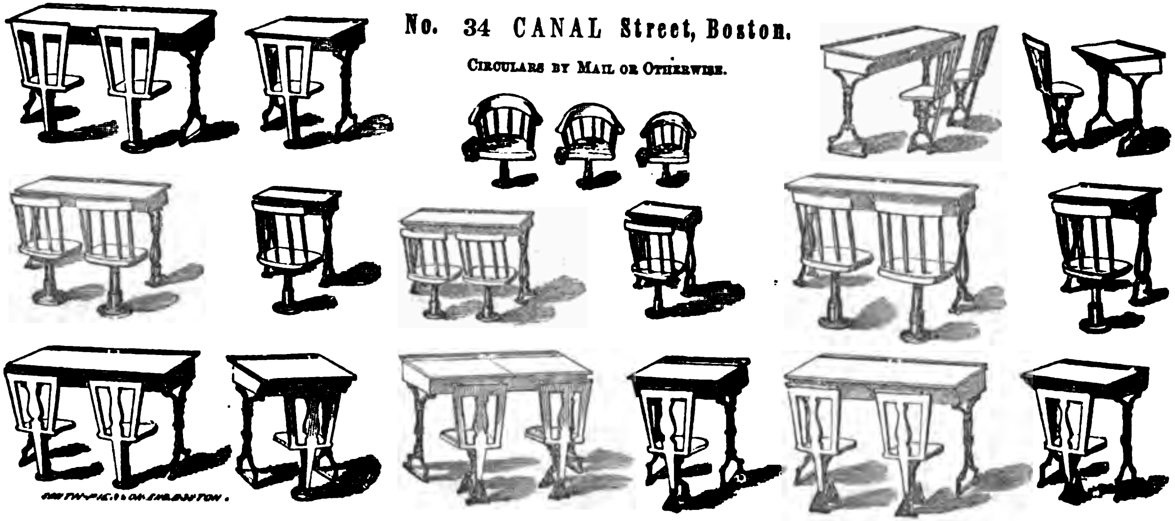

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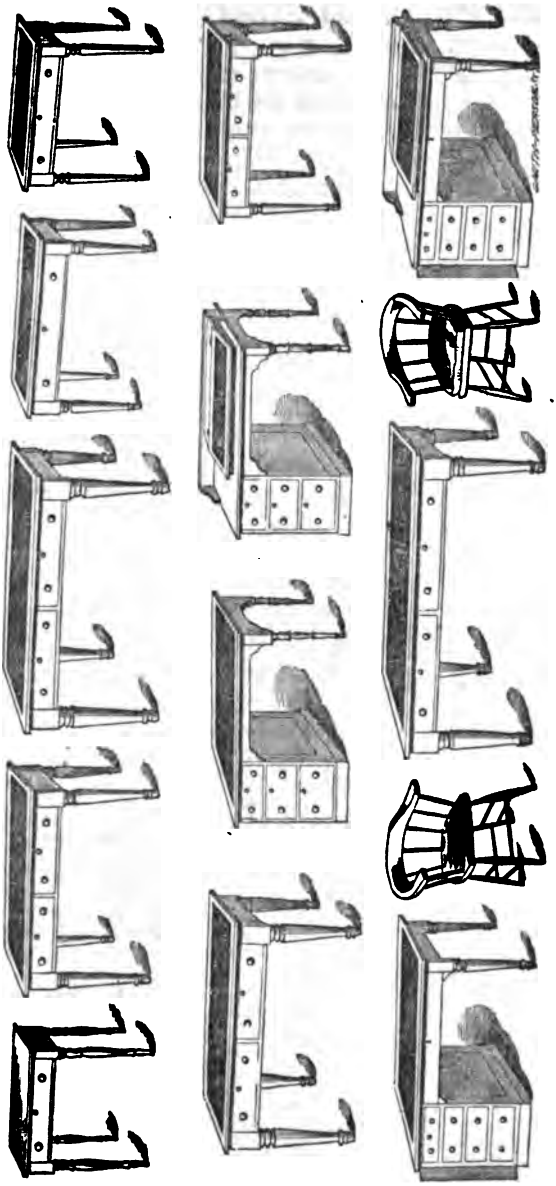

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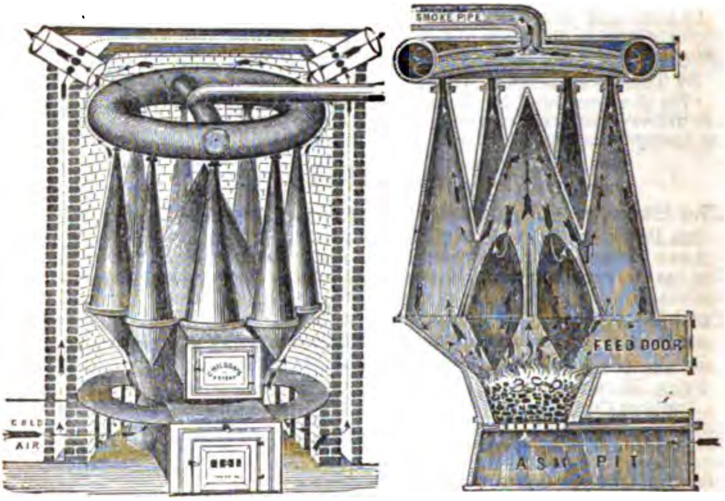

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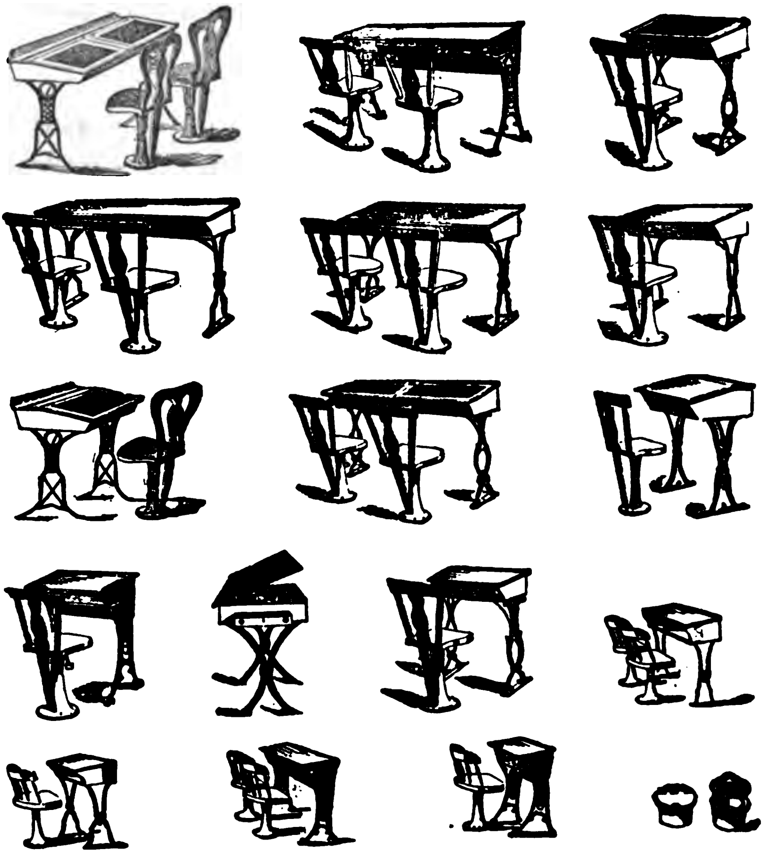

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